

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: DAWN GARRETT Examiner #: 76107 Date: June 2, 2004
Art Unit: 1774 Phone Number: 272-1523 Serial Number: 10/773,253
Mail Box and Bldg/Room Location: Rm 5C75 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Organic Luminous Material and Organic Light-Emitting Device
Inventors (please provide full names): _____

KOTA YOSHIKAWA, MASASHI KIJIMA, HIDEKI SHIRAKAWA,
Earliest Priority Filing Date: (JP 2001-125359, 2000-288692, 1KUO KINOSHITA
4/27/2000, 2000-128364)
For Sequence Searches Only Please include all pertinent information (parent, child, divisional/or issued patent numbers) along with the appropriate serial number.

Please search attached compound (1) in a
luminous layer / light-emitting device
thank you

(Tried to print out closest art toward the beginning.)

STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
Searcher: <u>ED</u>	NA Sequence (#) _____	STN <u>\$781.81</u>
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) <u>✓ (6)</u>	<u>Subsets</u> Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic <u>✓ (and)</u>	Dr. Link _____
Date Completed: <u>6-3-04</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>10</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: <u>140</u>	Other _____	Other (specify) _____

=> file reg

FILE 'REGISTRY' ENTERED AT 15:07:16 ON 03 JUN 2004
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=> d his

FILE 'HCAPLUS' ENTERED AT 13:12:55 ON 03 JUN 2004
L1 18258 S YOSHIKAWA ?/AU
L2 2256 S KIJIMA ?/AU
L3 3574 S SHIRAKAWA ?/AU
L4 16586 S KINOSHITA ?/AU
L5 1 S L1 AND L2 AND L3 AND L4
SEL L5 1 RN

FILE 'REGISTRY' ENTERED AT 13:13:12 ON 03 JUN 2004
L6 16 S E1-E16
L7 3 S L6 AND PMS/CI

FILE 'HCA' ENTERED AT 13:15:36 ON 03 JUN 2004
L8 5 S L7

FILE 'BEILSTEIN' ENTERED AT 13:16:03 ON 03 JUN 2004
L9 STR

FILE 'REGISTRY' ENTERED AT 13:24:30 ON 03 JUN 2004
L10 SCR 2043
L11 50 S L9 AND L10
L12 2596 S L9 AND L10 FUL
SAV L12 GAR253/A

FILE 'HCA' ENTERED AT 13:30:28 ON 03 JUN 2004
L13 287697 S LUM!N? OR PHOTOLUM!N? OR CHEMICOLUM!N? OR CHEMILUM!N? O
L14 83388 S (ELECTROLUM!N? OR ORGANOLUM!N? OR (ELECTRO OR ORGANO OR
L15 1516 S L12
L16 222 S L15 AND L13
L17 104 S L15 AND L14

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L18 STR L9

FILE 'REGISTRY' ENTERED AT 13:38:11 ON 03 JUN 2004
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E POLYACETYLENE/PCT
L20 10897 S E3

L21 E POLYOTHER/PCT
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 E POLYOTHER ONLY/PCT
L22 73390 S E3
L23 322 S L18 SSS FUL SUB=L12
 SAV L23 GAR253A/A
L24 270 S L23 AND (L20 OR L22)
L25 1620 S L12 NOT X/ELS
L26 186 S L24 AND L25
L27 1812 S L12 NOT N/ELS
L28 88 S L26 AND L27

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L29 60 S L28
L30 7 S L29 AND (L13 OR L14)

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L31 STR

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L33 SCR 1929 OR 1918 OR 1992
L34 22 S L31 NOT L33 SSS SAM SUB=L12
L35 SCR 1929 OR 1918 OR 1267 OR 1568 OR 1597 OR 1609
L36 27 S L31 NOT L35 SSS SAM SUB=L12
L37 387 S L31 NOT L35 SSS FUL SUB=L12
 SAV L37 GAR253B/A
L38 370 S L37 AND (L20 OR L22)
L39 123 POLYLINK L28

FILE 'HCA' ENTERED AT 14:13:37 ON 03 JUN 2004

L40 182 S L39
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L42 505 POLYLINK L38

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L43 267 S L42
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L46 36 S L43 AND L14
L47 34 S L45 AND L46

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L48 407 S L42 AND 1<NRS

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L49 STR
L50 STR
L51 STR L49

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L56 52 S L55
L57 6 S L56 AND (L13 OR L14)

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L60 3 S L7 AND (L55 OR L28)
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L62 30 S L47 NOT L61
L63 96 S (L29 OR L56) NOT (L61 OR L62)
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L65 13 S L62 AND (1907-2000/PY OR 1907-2000/PRY)
L66 84 S L63 AND (1907-2000/PY OR 1907-2000/PRY)

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L68 682 S L67 AND (L20 OR L22)
L69 365 S L68 AND L25

FILE 'HCA' ENTERED AT 14:57:58 ON 03 JUN 2004

L70 470 S L69
L71 94 S L70 AND (L13 OR L14)

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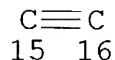
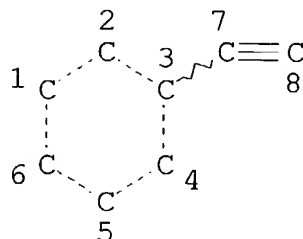
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L79 31 S L78 AND (1907-2000/PY OR 1907-2000/PRY)

FILE 'REGISTRY' ENTERED AT 15:07:16 ON 03 JUN 2004

=> d 123 que stat
L9 STR



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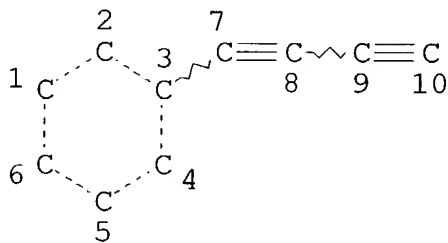
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CONNECT IS E2 RC AT 15
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RSPEC I
NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE

L10 SCR 2043
L12 2596 SEA FILE=REGISTRY SSS FUL L9 AND L10
L18 STR



NODE ATTRIBUTES:

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DEFAULT MLEVEL IS ATOM
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GRAPH ATTRIBUTES:

RSPEC I
NUMBER OF NODES IS 10

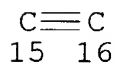
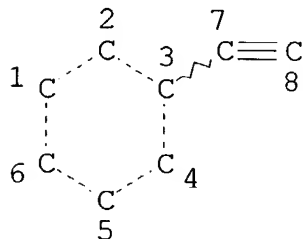
STEREO ATTRIBUTES: NONE

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SEARCH TIME: 00.00.01

322 ANSWERS

=> d 137 que stat
L9 STR



NODE ATTRIBUTES:

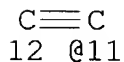
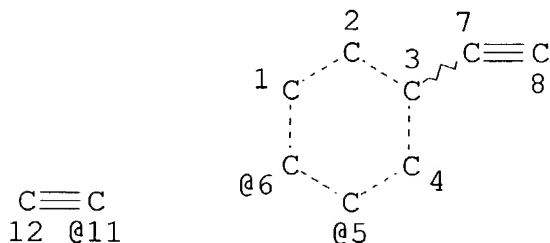
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DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RSPEC I
NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE

L10 SCR 2043
L12 2596 SEA FILE=REGISTRY SSS FUL L9 AND L10
L31 STR



VPA 11-5/6 U

NODE ATTRIBUTES:

CONNECT IS E3 RC AT 2
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RSPEC I

NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE

L35 SCR 1929 OR 1918 OR 1267 OR 1568 OR 1597 OR 1609

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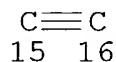
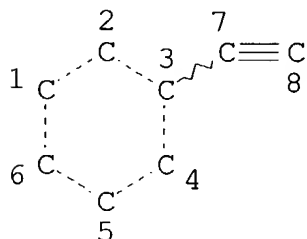
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387 ANSWERS

SEARCH TIME: 00.00.01

=> d 153 que stat

L9 STR



NODE ATTRIBUTES:

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DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RSPEC I

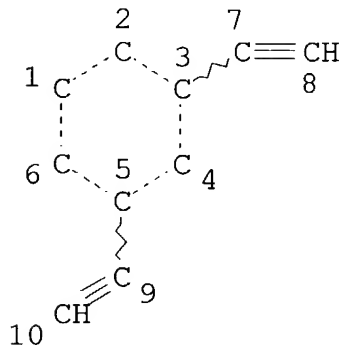
NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE

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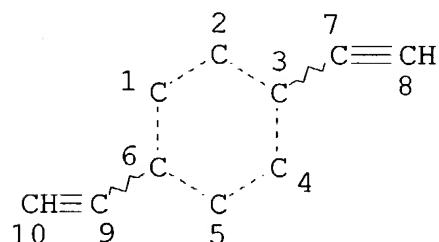
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NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE
L51 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE
L53 46 SEA FILE=REGISTRY SUB=L12 SSS FUL L50 AND L51

100.0% PROCESSED 545 ITERATIONS 46 ANSWERS
SEARCH TIME: 00.00.01

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FILE 'HCA' ENTERED AT 15:08:28 ON 03 JUN 2004
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=> d 164 1-14 cbib abs hitstr hitind

L64 ANSWER 1 OF 14 HCA COPYRIGHT 2004 ACS on STN
136:248147 Anomalous molecular alignment of liquid crystalline
conducting conjugated polymer, poly(2,5-dialkoxy-p-
phenylenebutadiynylene), using conventional rubbing process. Ozaki,

Masanori; Fujisawa, Takeshi; Fujii, Akihiko; Tong, Laga; Yoshino, Katsumi; Kijima, Masashi; Kinoshita, Ikuo; Shirakawa, Hideki (Dep. Electronic Eng., Fac. Eng., Osaka Univ., 2-1 Yamada-oka, Suita, Osaka, 565-0871, Japan). *Denki Zairyo Gijutsu Zasshi*, 9(2), 192-195 (English) **2000**. CODEN: DZGZFE. ISSN: 0918-9890.

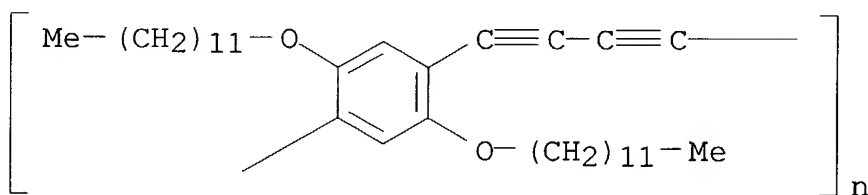
Publisher: Denki Zairyo Gijutsu Kondankai.

- AB The mol. alignment characteristics of liq. cryst. conducting polymer, poly(2,5-dialkoxy-p-phenylenebutadiynylene), were studied. Through a conventional simple rubbing procedure, a uniform mol. alignment with a high quality in a sandwich cell of liq. cryst. conducting polymer, PDAPB, including triple bonds in the main chain was realized by cooling down from the isotropic phase. An anomalous mol. alignment in which the alkoxy side chain aligned in parallel with the rubbing direction and the mesogenic main chains aligned in perpendicular to the rubbing axis was reported. The viscosity of PDAPB was relatively low compared with the conventional conducting polymers, which was due to flexibility of the conjugated systems in terms of a free rotation of the triple bonds in their main chain. The mol. alignment behavior of the alkoxy side chain of the polymer was quite different from that of a conventional rod-like liq. crystal with low mol. wt. or side-chain type polymeric liq. having a polyacrylate or polysiloxane skeletons.

- IT **227329-08-0**
(anomalous mol. alignment of liq. cryst. conducting conjugated polymer, poly(2,5-dialkoxy-p-phenylenebutadiynylene), using conventional rubbing process)

RN 227329-08-0 HCA

CN Poly[[2,5-bis(dodecyloxy)-1,4-phenylene]-1,3-butadiyne-1,4-diyl]
(9CI) (CA INDEX NAME)



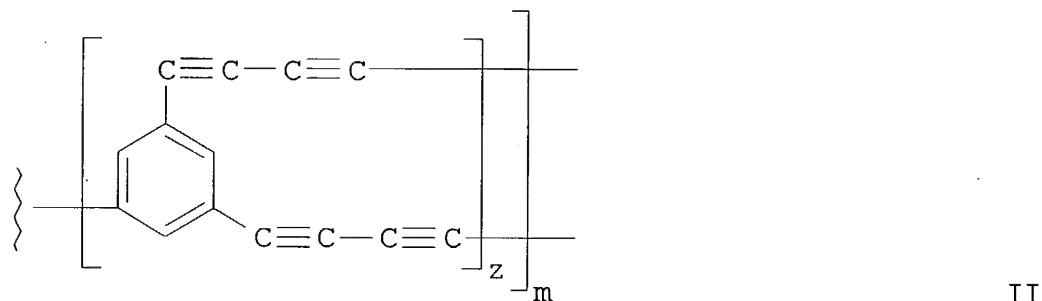
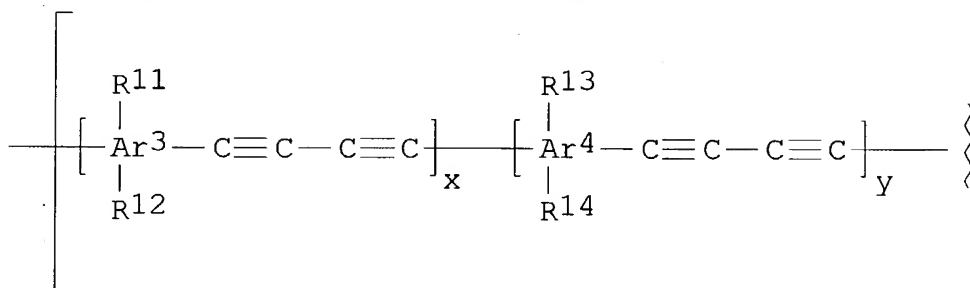
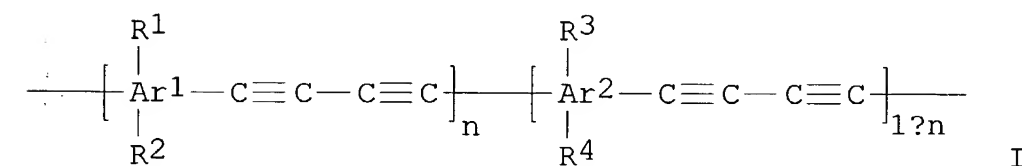
CC 36-5 (Physical Properties of Synthetic High Polymers)
Section cross-reference(s): 75

- IT 227329-05-7 227329-06-8 227329-07-9 **227329-08-0**
(anomalous mol. alignment of liq. cryst. conducting conjugated polymer, poly(2,5-dialkoxy-p-phenylenebutadiynylene), using conventional rubbing process)

L64 ANSWER 2 OF 14 HCA COPYRIGHT 2004 ACS on STN
136:12556 Organic **luminescent** materials and organic
light-emitting devices based on them. Yoshikawa,

Kota; Kijima, Masashi; Shirakawa, Hideki; Kinoshita, Ikuo (Fujitsu Limited, Japan). Eur. Pat. Appl. EP 1158839 A2 20011128, 22 pp.
 DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 2001-303861 20010427. PRIORITY: JP 2000-128364 20000427; JP 2000-288692 20000922; JP 2001-125359 20010424.

GI



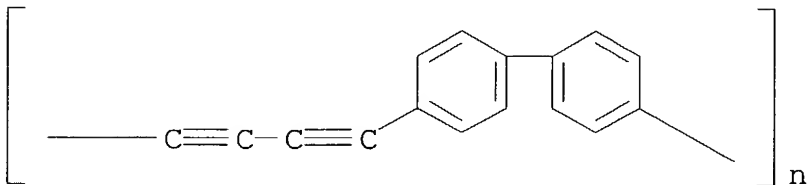
AB **Luminescent** materials are described by the general formulas I and II (Ar¹⁻⁴ = arylene groups; R¹⁻⁴, R¹¹⁻¹⁴ = same or different substituents; n, x, y, z = copolymn. ratios; and m = d.p.). Thus, green-emitting, red-emitting and blue-emitting **luminescent** materials were synthesized and characterized. Org. **light-emitting** devices are also described which comprise a lower electrode; a **luminescent** layer formed on the lower electrode and made of polymer I or II; and an upper electrode formed on the **luminescent** layer.

IT 121265-60-9P 375395-26-9P

(blue-emitting; **org. luminous** materials and
org. light-emitting devices based on
 them)

RN 121265-60-9 HCA

CN Poly([1,1'-biphenyl]-4,4'-diyl-1,3-butadiyne-1,4-diyl) (9CI) (CA
 INDEX NAME)



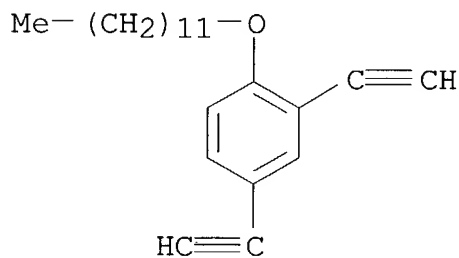
RN 375395-26-9 HCA

CN Benzene, 1,4-bis(dodecyloxy)-2,5-diethynyl-, polymer with
 1-(dodecyloxy)-2,4-diethynylbenzene and 1,3,5-triethynylbenzene
 (9CI) (CA INDEX NAME)

CM 1

CRN 350237-28-4

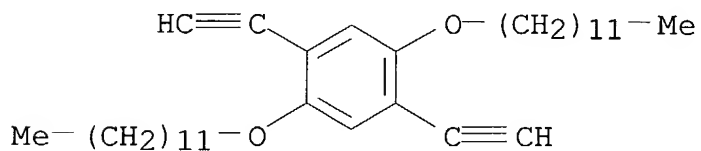
CMF C22 H30 O



CM 2

CRN 152270-00-3

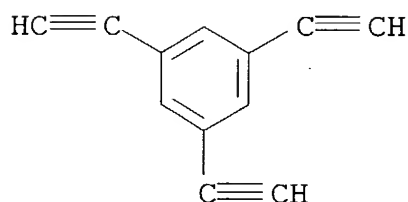
CMF C34 H54 O2



CM 3

CRN 7567-63-7

CMF C12 H6

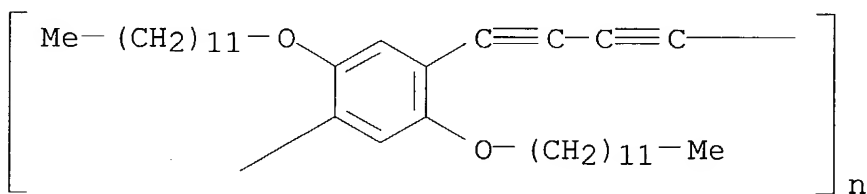


IT 227329-08-0P

(green-emitting; **org. luminous** materials and
org. light-emitting devices based on
 them)

RN 227329-08-0 HCA

CN Poly[[2,5-bis(dodecyloxy)-1,4-phenylene]-1,3-butadiyne-1,4-diyl]
 (9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS C08F038-00

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 25, 38, 76

ST **org** polymer **luminescent** material **light emitting** device

IT Polymers, uses

(co-; **org. luminescent** materials and
org. light-emitting devices based on
 them)

IT Alkali metals, uses

Alkaline earth metals

(electrode; **org. luminous** materials and
org. light-emitting devices contg.)

IT Electroluminescent devices

(**org. luminous** materials and **org.**
light-emitting devices based on them)

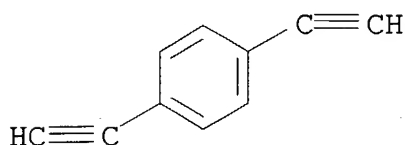
- IT **Luminescent substances**
(**org. luminous** materials prepd. using)
- IT **121265-60-9P 375395-26-9P**
(blue-emitting; **org. luminous** materials and
org. light-emitting devices based on
them)
- IT **227329-08-0P**
(green-emitting; **org. luminous** materials and
org. light-emitting devices based on
them)
- IT 92-86-4, 4,4'-Dibromobiphenyl 1066-54-2, Trimethylsilylacetylene
7567-63-7, 1,3,5-Triethynylbenzene 27342-88-7, Dodecanol
50855-13-5, Thiophenecarboxylic acid
(**org. luminous** materials prepd. using)
- IT 7311-70-8P 29619-44-1P, 4,4'-Bis(trimethylsilylethynyl)biphenyl
38215-38-2P, 4,4'-Diethynylbiphenyl 375395-19-0P 375395-20-3P
(**org. luminous** materials prepd. using)
- IT 7440-50-8, Copper, uses
(**org. luminous** materials prepd. using
oxidative condensation polymn. catalyzed by)
- IT 152270-00-3 350237-28-4
(**org. luminous** materials prepd. using
oxidative condensation polymn. of)
- L64 ANSWER 3 OF 14 HCA COPYRIGHT 2004 ACS on STN
- 133:267308 Anomalous optical anisotropy induced by liquid crystallinity
of poly(2,5-dialkoxy-p-phenylenebutadiynylene) using a conventional
rubbing process. Ozaki, Masanori; Fujisawa, Takeshi; Fujii,
Akihiko; Tong, Laga; Yoshino, Katsumi; Kijima, Masashi; Kinoshita,
Ikuo; Shirakawa, Hideki (Department of Electronic Engineering, Osaka
University, Osaka, 565-0871, Japan). Advanced Materials (Weinheim,
Germany), 12(8), 587-589 (English) 2000. CODEN: ADVMEW.
ISSN: 0935-9648. Publisher: Wiley-VCH Verlag GmbH.
- AB A high-quality, uniform mol. alignment was achieved for a sample of
the liq. cryst., conducting title polymer PDAPB sandwiched between 2
glass plates, when a simple conventional rubbing procedure was
applied. An anomalous mol. alignment was obtained by rubbing when
the sample was cooled down from the isotropic phase. In this
alignment, the alkoxy side chains align parallel to the rubbing
direction with the mesogenic main chain perpendicular to the rubbing
axis. The samples were characterized by Raman, absorption,
polarizing absorption, and **photoluminescence** spectroscopy.
- IT **26713-43-9D**, 1,4-Diethynylbenzene homopolymer, alkoxy
derivs. **28729-99-9D**, alkoxy derivs.
(anomalous optical anisotropy induced by liq. crystallinity of
poly(2,5-dialkoxy-p-phenylenebutadiynylene) using a conventional
rubbing process)
- RN 26713-43-9 HCA

CN Benzene, 1,4-diethynyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

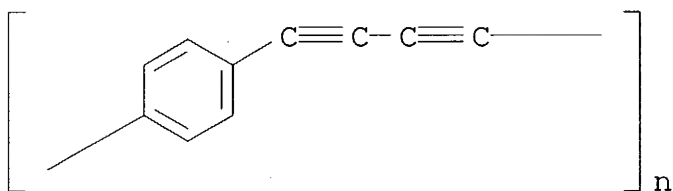
CRN 935-14-8

CMF C10 H6



RN 28729-99-9 HCA

CN Poly(1,4-phenylene-1,3-butadiyne-1,4-diyl) (9CI) (CA INDEX NAME)



CC 36-5 (Physical Properties of Synthetic High Polymers)
Section cross-reference(s): 73, 75

IT **Luminescence**

Raman spectra

UV and visible spectra

(anomalous optical anisotropy induced by liq. crystallinity of poly(2,5-dialkoxy-p-phenylenebutadiynylene) studied via)

IT **26713-43-9D**, 1,4-Diethynylbenzene homopolymer, alkoxy
derivs. **28729-99-9D**, alkoxy derivs.

(anomalous optical anisotropy induced by liq. crystallinity of poly(2,5-dialkoxy-p-phenylenebutadiynylene) using a conventional rubbing process)

L64 ANSWER 4 OF 14 HCA COPYRIGHT 2004 ACS on STN

132:294267 Thermally stable **light-emitting** polymers

of substituted polyacetylenes. Yu, G.; Liu, Y.; Zhan, X.; Li, H.; Yang, M.; Zhu, D. (Institute of Chemistry, Center for Molecular Science, Chinese Academy of Sciences, Beijing, Peop. Rep. China). Thin Solid Films, 363(1,2), 126-129 (English) **2000**.

CODEN: THSFAP. ISSN: 0040-6090. Publisher: Elsevier Science S.A..

AB We report emission from a series of aryl-substituted polyacetylenes poly(phenylacetylene) (PPA), poly(p-ethynylphenylacetylene) (PEPA), poly(p-phenylethynylphenylacetylene) (PPEPA), and poly[p-(2-thiophenylethynyl)phenylacetylene] (PTEPA). These

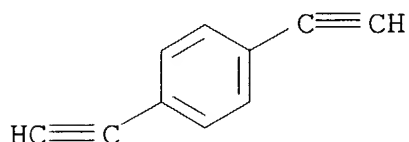
polymers are readily sol., easily processable from org. solvents, and stable up to 200°C either in air or in nitrogen according to thermogravimetric anal. Single layer **light-emitting** diodes using PPA, PEPA, PPEPA, and PTEPA as an emissive layer were fabricated. The effects of substituted groups on UV-vis absorption, **photoluminescence** and **electroluminescence** spectra of the polymers are discussed.

IT 26713-43-9, 1,4-Di(ethynyl)benzene homopolymer
(thermally stable **light-emitting** substituted polyacetylenes)
RN 26713-43-9 HCA
CN Benzene, 1,4-diethynyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 935-14-8

CMF C10 H6



CC 36-5 (Physical Properties of Synthetic High Polymers)
ST polyacetylene substituted **luminescence**
electroluminescence LED
IT **Electroluminescent** devices
Luminescence
Luminescence, electroluminescence
(thermally stable **light-emitting** substituted polyacetylenes)
IT Polyacetylenes, properties
(thermally stable **light-emitting** substituted polyacetylenes)
IT 25038-69-1, Poly(phenylacetylene) 26713-43-9,
1,4-Di(ethynyl)benzene homopolymer 264884-56-2 264884-58-4
(thermally stable **light-emitting** substituted polyacetylenes)

L64 ANSWER 5 OF 14 HCA COPYRIGHT 2004 ACS on STN

132:79256 **Photoluminescence, electroluminescence,**
nonlinear optical, and humidity sensitive properties of
poly(p-diethynylbenzene) prepared with a nickel acetylide catalyst.
Zhan, Xiao Wei; Yang, Mu Jie; Lei, Zi Qiang; Li, Yang; Liu, Yun Qi;
Yu, Gui; Zhu, Dao Ben (Institute Chemistry, Chinese Academy
Sciences, Beijing, 100080, Peop. Rep. China). Advanced Materials
(Weinheim, Germany), 12(1), 51-53 (English) 2000. CODEN:

ADVMEW. ISSN: 0935-9648. Publisher: Wiley-VCH Verlag GmbH.

AB The title compd. (PDEB) was prepd. in sol., stable form using a novel catalyst, bis(triphenylphosphine)bisacetylide Ni. Absorption (in CHCl₃ soln.), **photoluminescence** (in a thin film), and **electroluminescence** (in an LED) spectra are reported.

Third-order nonlinear optical properties were studied by degenerate 4-wave mixing in THF soln. Cond. dependence on doping and the resistance-type humidity sensitivity is studied, with a view to prepg. new humidity sensors.

IT **26713-43-9P**, p-Diethynylbenzene homopolymer
(salt-doped; prepn. and optical properties of
poly(diethynylbenzene) prepd. with nickel acetylide catalyst)

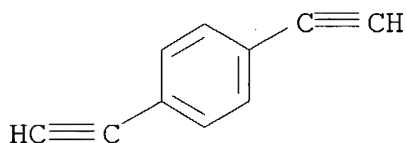
RN 26713-43-9 HCA

CN Benzene, 1,4-diethynyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 935-14-8

CMF C10 H6



CC 37-5 (Plastics Manufacture and Processing)

ST polydiethynylbenzene electrooptical property nickel acetylide catalyst; elec cond doped polydiethynylbenzene LED; nonlinear optics **luminescence electroluminescence** diethynylbenzene polymer

IT Electric conductivity

Electroluminescent devices

Nonlinear optical susceptibility

(prepn. and optical of poly(diethynylbenzene) prepd. with nickel acetylide catalyst)

IT **Luminescence**

Luminescence, electroluminescence

Third-order nonlinear optical properties

(prepn. and optical properties of poly(diethynylbenzene) prepd. with nickel acetylide catalyst)

IT **26713-43-9P**, p-Diethynylbenzene homopolymer

(salt-doped; prepn. and optical properties of

poly(diethynylbenzene) prepd. with nickel acetylide catalyst)

L64 ANSWER 6 OF 14 HCA COPYRIGHT 2004 ACS on STN

131:45351 Optical properties of poly(2,5-dialkoxy-p-phenylenebutadiynylene). Fujii, Akihiko; Fujisawa, Takeshi;

Yoshino, Katsumi; Kijima, Masashi; Kinoshita, Ikuo; Shirakawa, Hideki (Department of Electronic Engineering, Graduate School of Engineering, Osaka University, Suita, 565-0871, Japan). Japanese Journal of Applied Physics, Part 2: Letters, 38(4A), L406-L409 (English) 1999. CODEN: JAPLD8. ISSN: 0021-4922.

Publisher: Japanese Journal of Applied Physics.

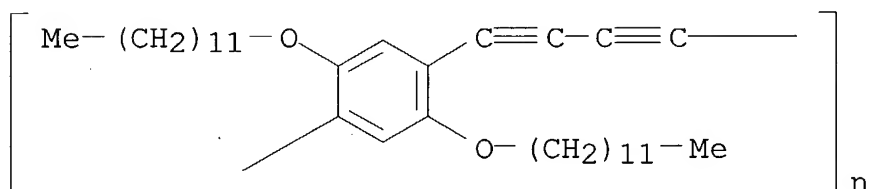
- AB Optical properties of poly(2,5-dialkoxy-p-phenylenebutadiynylene) (PDAPB), such as optical absorption, **photoluminescence** (PL) and **electroluminescence** (EL), have been studied. The electronic energy structures of PDAPB have been detd. by optical and electrochem. measurements. Strong PL with high quantum efficiency has been obsd. in PDAPB, therefore, PDAPB can be considered as a candidate for use in **EL** materials. Intense **EL** has been demonstrated in PDAPB for the first time, in conducting polymers with two C-C triple bonds in a unit in the main chain. Anomalous temp. dependence in the absorption spectrum and PL have also been obsd.

IT 227329-08-0

(216149-55-2; optical properties of poly(2,5-dialkoxy-p-phenylenebutadiynylene))

RN 227329-08-0 HCA

CN Poly[[2,5-bis(dodecyloxy)-1,4-phenylene]-1,3-butadiyne-1,4-diyl] (9CI) (CA INDEX NAME)

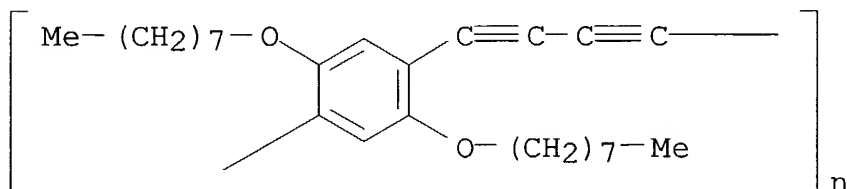


IT 227329-06-8

(optical properties of poly(2,5-dialkoxy-p-phenylenebutadiynylene))

RN 227329-06-8 HCA

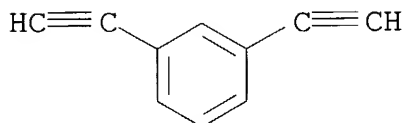
CN Poly[[2,5-bis(octyloxy)-1,4-phenylene]-1,3-butadiyne-1,4-diyl] (9CI) (CA INDEX NAME)



CC 36-5 (Physical Properties of Synthetic High Polymers)

- Section cross-reference(s): 73
- IT Conducting polymers
Current density
Electric properties
Electronic structure
HOMO (molecular orbital)
LUMO (molecular orbital)
Luminescence
Luminescence, electroluminescence
Optical properties
(optical properties of poly(2,5-dialkoxy-p-phenylenebutadiynylene))
- IT **227329-08-0**
(**216149-55-2**; optical properties of poly(2,5-dialkoxy-p-phenylenebutadiynylene))
- IT **227329-06-8** **227329-07-9**
(optical properties of poly(2,5-dialkoxy-p-phenylenebutadiynylene))
- L64 ANSWER 7 OF 14 HCA COPYRIGHT 2004 ACS on STN
130:352648 Poly[(p-phenyleneethynylene)-alt-(m-phenyleneethynylene)]s.
Li, Juan; Pang, Yi (Department of Chemistry & Center for High Performance Polymers and Composites, Clark Atlanta University, Atlanta, GA, 30314, USA). Polymer Preprints (American Chemical Society, Division of Polymer Chemistry), 40(1), 57 (English) 1999. CODEN: ACPPAY. ISSN: 0032-3934. Publisher: American Chemical Society, Division of Polymer Chemistry.
- AB Poly(phenyleneethynylene)s (PPE) of high **luminescence** for applications in electronic and optical devices were synthesized and structural effects on the polymer soly. and **luminescence** were studied. The polymers include: poly[(p-phenyleneethynylene)alt-(m-phenyleneethynylene)], poly[(m-phenyleneethynylene)-2,5-bis(hexyloxy)-1,4-diiodobenzene], and the terpolymer with 4,4'-diiodobenzene. The electronic band structure of the chromophore polymer blends is the same as that of the corresponding homopolymers, arising from the π -conjugation interruption at m-phenylene.
- IT **30523-88-7P**, p-Phenyleneethynylene-m-phenyleneethynylene copolymer
(blends; prepn. and electronic structure of chromophore conjugated poly(phenyleneethynylene)s and their blends)
- RN 30523-88-7 HCA
CN Benzene, 1,3-diethynyl-, polymer with 1,4-diethynylbenzene (9CI)
(CA INDEX NAME)
- CM 1
- CRN 1785-61-1

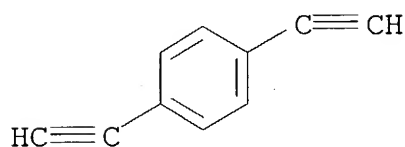
CMF C10 H6



CM 2

CRN 935-14-8

CMF C10 H6



CC 35-4 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 36

ST polyphenyleneethynylene prepn **luminescence** alternating
substituent effect; polyacetylene alternating meta para substituent
effect

IT Band structure

Luminescence(prepn. and electronic structure of chromophore conjugated
poly(phenyleneethynylene)s and their blends)IT **30523-88-7P**, p-Phenyleneethynylene-m-phenyleneethynylene
copolymer 213262-77-2P, (m-Phenyleneethynylene)-2,5-bis(hexyloxy)-
1,4-diiodobenzene copolymer 213262-79-4P, (m-Phenyleneethynylene)-
2,5-bis(hexyloxy)-1,4-diiodobenzene copolymer, sru 224587-13-7P,
2,5-Bis(hexyloxy)-1,4-diiodobenzene-1,4-diiodobenzene-m-
phenyleneethynylene copolymer(blends; prepn. and electronic structure of chromophore
conjugated poly(phenyleneethynylene)s and their blends)

L64 ANSWER 8 OF 14 HCA COPYRIGHT 2004 ACS on STN

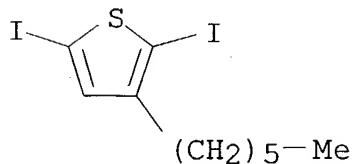
128:35115 Poly(aryleneethynylene) Type Polymers Composed of p-Phenylene
and 2,5-Thienylene Units. Analysis of Polymerization Conditions and
Terminal Group in Relation to the Mechanism of the Polymerization
and Chemical and Optical Properties of the Polymer. Yamamoto,
Takakazu; Honda, Keisuke; Ooba, Naoki; Tomaru, Satoru (Research
Laboratory of Resources Utilization, Tokyo Institute of Technology,
Yokohama, 226, Japan). *Macromolecules*, 31(1), 7-14 (English)
1998. CODEN: MAMOBX. ISSN: 0024-9297. Publisher: American
Chemical Society.

- AB Palladium-catalyzed polycondensation between p-diethynylbenzene and 2,5-diiodo-3-hexylthiophene was carried out under various temps. and reaction media, esp. different amines. The polymer (PAE-1) has Mn of about 3×10^4 (by GPC, polystyrene stds.) and viscosity $[\eta]$ of 0.8 dL/g. The catalyst is a mixt. of $\text{Pd}(\text{PPh}_3)_4$ and CuI . When neat NEt_3 was used in the reaction medium, polymn. proceeded fast. $^1\text{H-NMR}$ spectra indicate that oligomeric PAE-1 obtained at short polymn. time has a C-I bond as the major terminal group, which is consistent with a Pd-catalyzed C-C coupling reaction route. The C-I terminal bond of oligomeric PAE-1 reacts with 1,3,5-triethynylbenzene and 1,2,4,5-tetraethynylbenzene to give polymers with Mn of 8.7×10^5 and 2.3×10^6 (by GPC), resp., and the polymers are expected to have star-type structure. All the polymers show two (main and sub) **photoluminescence** PL peaks at 456 ± 3 and 486 ± 2 nm. The C.tplbond.C bond of PAE-1 is susceptible to trans-type hydrogenation with SMEAH (sodium bis(2-methoxyethoxy)aluminum hydride) and DIBAL (diisobutylaluminum hydride) and to chlorofluorination by a mixt. of N-chlorosuccinic imide and a pyridinium salt of $(\text{HF})\text{x}\text{F}^-$.
- IT **199617-51-1P**, p-Diethynylbenzene-2,5-diiodo-3-hexylthiophene-1,3,5-triethynylbenzene copolymer **199617-52-2P**, p-Diethynylbenzene-2,5-diiodo-3-hexylthiophene-1,2,4,5-tetraethynylbenzene copolymer
(prepn. and **photoluminescence** and optical properties of poly(ethynylphenylene-thienylene)s)
- RN 199617-51-1 HCA
- CN Thiophene, 3-hexyl-2,5-diiodo-, polymer with 1,4-diethynylbenzene and 1,3,5-triethynylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 113736-20-2

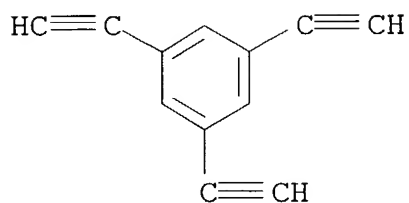
CMF C10 H14 I2 S



CM 2

CRN 7567-63-7

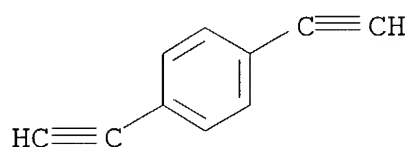
CMF C12 H6



CM 3

CRN 935-14-8

CMF C10 H6



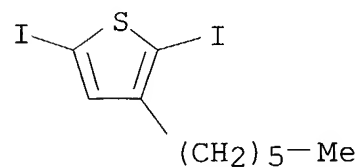
RN 199617-52-2 HCA

CN Thiophene, 3-hexyl-2,5-diiodo-, polymer with 1,4-diethynylbenzene and 1,2,4,5-tetraethynylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 113736-20-2

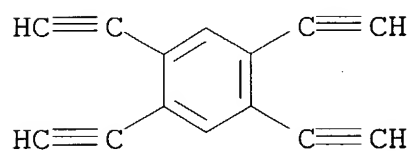
CMF C10 H14 I2 S



CM 2

CRN 70603-31-5

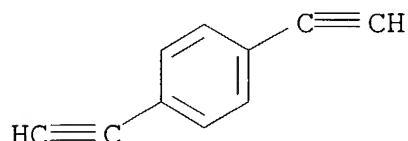
CMF C14 H6



CM 3

CRN 935-14-8

CMF C10 H6



- CC 35-7 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 27, 36, 74
- ST diethynylbenzene diiodohexylthiophene polycondensation palladium catalyzed; coupling condensation ethynylbenzene iodoethylthiophene copolymer prepn; **photoluminescence** polyacetylene polythiophene star structure
- IT Polymer chains
(branching; prepn. and **photoluminescence** and optical properties of poly(ethynylphenylene-thienylene)s)
- IT Polymers, preparation
(conjugated; prepn. and **photoluminescence** and optical properties of poly(ethynylphenylene-thienylene)s)
- IT Polyacetylenes, preparation
Polyacetylenes, preparation
(polythiophene-; prepn. and **photoluminescence** and optical properties of poly(ethynylphenylene-thienylene)s)
- IT Polydiacetylenes
(polythiophene; prepn. and **photoluminescence** and optical properties of poly(ethynylphenylene-thienylene)s)
- IT Electronic excitation
Excimer
Luminescence
Nonlinear optical susceptibility
Optical absorption
Third-order nonlinear optical properties
(prepn. and **photoluminescence** and optical properties of poly(ethynylphenylene-thienylene)s)
- IT 149011-99-4P, p-Diethynylbenzene-2,5-diiodo-3-hexylthiophene copolymer 149175-01-9P, p-Diethynylbenzene-2,5-diiodo-3-hexylthiophene copolymer, SRU
(prepn. and **photoluminescence** and optical properties of poly(ethynylphenylene-thienylene)s)
- IT **199617-51-1P**, p-Diethynylbenzene-2,5-diiodo-3-hexylthiophene-1,3,5-triethynylbenzene copolymer **199617-52-2P**, p-Diethynylbenzene-2,5-diiodo-3-hexylthiophene-1,2,4,5-

tetraethynylbenzene copolymer
(prepn. and **photoluminescence** and optical properties of
poly(ethynylphenylene-thienylene)s)

L64 ANSWER 9 OF 14 HCA COPYRIGHT 2004 ACS on STN

128:35102 An attempt to synthesize star-type conjugated polymer,
poly(arylene ethynylene), formed by palladium-catalyzed coupling of
 π -conjugated oligomeric poly(arylene ethynylene) with
1,3,5-triethynylbenzene and 1,2,4,5-tetraethynylbenzene. Honda,
Keisuke; Maruyama, Tsukasa; Yamamoto, Takakazu (Midori-ku,
Nagatsuta, Research Laboratory of Resources Utilization, Tokyo
Institute of Technology, Yokohama 226, 4259, Japan). Synthetic
Metals, 90(2), 153-155 (English) 1997. CODEN: SYMEDZ.
ISSN: 0379-6779. Publisher: Elsevier Science S.A..

AB Polycondensation of 2,5-diiodo-3-hexylthiophene and
p-diethynylbenzene and either 1,3,5-triethynylbenzene or
1,2,4,5-tetraethynylbenzene was carried out at 60° using
Pd(PPh₃)₄ - CuI as catalyst. The polyacetylene-polythiophene star
branched conjugated polymers exhibit π -conjugation and have high
mol. wt., and a **photoluminescence** peak at 457±2 nm with
a quantum yield of 35±4%.

IT 199617-51-1P 199617-52-2P

(prepn. and **photoluminescence** of star conjugated
poly(acetylene-thiophene)s by Pd-catalyzed coupling of
ethynylbenzenes and 3-hexylthiophene)

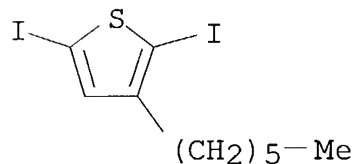
RN 199617-51-1 HCA

CN Thiophene, 3-hexyl-2,5-diiodo-, polymer with 1,4-diethynylbenzene
and 1,3,5-triethynylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 113736-20-2

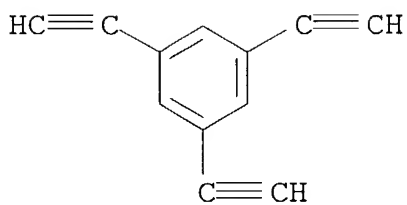
CMF C10 H14 I2 S



CM 2

CRN 7567-63-7

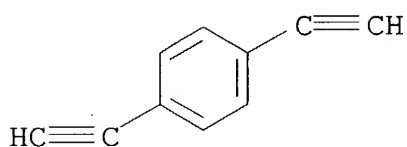
CMF C12 H6



CM 3

CRN 935-14-8

CMF C10 H6



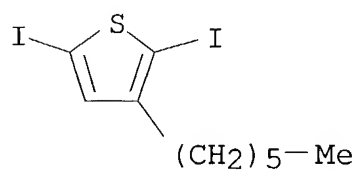
RN 199617-52-2 HCA

CN Thiophene, 3-hexyl-2,5-diiodo-, polymer with 1,4-diethynylbenzene and 1,2,4,5-tetraethynylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 113736-20-2

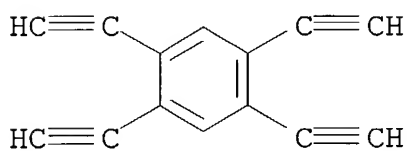
CMF C10 H14 I2 S



CM 2

CRN 70603-31-5

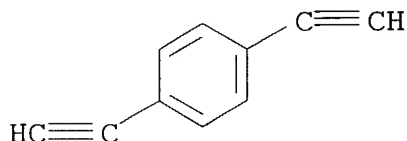
CMF C14 H6



CM 3

CRN 935-14-8

CMF C10 H6



- CC 35-5 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 36, 74
- ST iodohexylthiophene ethynylbenzene copolymer prepn palladium catalyst; conjugated polymer prepn palladium catalyzed coupling; polyacetylene polythiophene prepn **photoluminescence**
- IT Polymers, preparation
(conjugated; prepn. and **photoluminescence** of star conjugated poly(acetylene-thiophene)s by Pd-catalyzed coupling of ethynylbenzenes and 3-hexylthiophene)
- IT Polydiacetylenes
(polythiophene; prepn. and **photoluminescence** of star conjugated poly(acetylene-thiophene)s by Pd-catalyzed coupling of ethynylbenzenes and 3-hexylthiophene)
- IT Polymers, preparation
(polythiophenes, polydiacetylene; prepn. and **photoluminescence** of star conjugated poly(acetylene-thiophene)s by Pd-catalyzed coupling of ethynylbenzenes and 3-hexylthiophene)
- IT **Luminescence**
(prepn. and **photoluminescence** of star conjugated poly(acetylene-thiophene)s by Pd-catalyzed coupling of ethynylbenzenes and 3-hexylthiophene)
- IT Dendritic polymers
(π -conjugated; prepn. and **photoluminescence** of star conjugated poly(acetylene-thiophene)s by Pd-catalyzed coupling of ethynylbenzenes and 3-hexylthiophene)
- IT 7681-65-4, Copper iodide (CuI) 14221-01-3, Tetrakis(triphenylphosphine)palladium
(prepn. and **photoluminescence** of star conjugated poly(acetylene-thiophene)s by Pd-catalyzed coupling of ethynylbenzenes and 3-hexylthiophene)
- IT 149011-99-4P, p-Diethynylbenzene-2,5-diiodo-3-hexylthiophene copolymer 149175-01-9P, p-Diethynylbenzene-2,5-diiodo-3-hexylthiophene copolymer, sru **199617-51-1P**
199617-52-2P

(prepn. and **photoluminescence** of star conjugated poly(acetylene-thiophene)s by Pd-catalyzed coupling of ethynylbenzenes and 3-hexylthiophene)

L64 ANSWER 10 OF 14 HCA COPYRIGHT 2004 ACS on STN

123:170447 Synthesis and optical properties of some novel arylene-alkynylene polymers. Mangel, Timo; Eberhardt, Anke; Scherf, Ullrich; Bunz, Uwe H. F.; Muellen, Klaus (Max-Planck-Institut Polymerforschung, Mainz, D-55021, Germany). Macromolecular Rapid Communications, 16(8), 571-80 (English) 1995. CODEN: MRCOE3. ISSN: 1022-1336. Publisher: Huethig & Wepf.

AB The prepn. and optical properties of aryleneethynylenes and arylenebutadiynylenes using either Heck-type or Hay-type coupling are reported. The prepn. of meta-linked arylenealkynylenes also is reported. The av. d.p. of the polymers is 13-60. Some of the materials show promising optical properties (**photoluminescence**).

IT 167319-39-3P, 1,4-Diethynyl-2,5-dihexylbenzene homopolymer
167319-40-6P, 1,4-Diethynyl-2,5-dihexylbenzene homopolymer
sru

(prepn. and optical properties of poly(arylenealkynylenes))

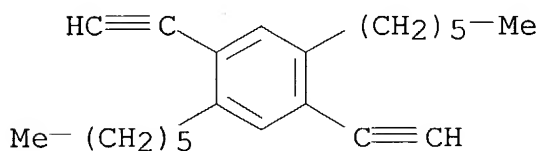
RN 167319-39-3 HCA

CN Benzene, 1,4-diethynyl-2,5-dihexyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

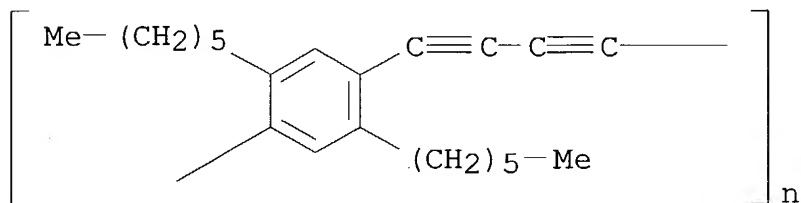
CRN 167319-38-2

CMF C22 H30



RN 167319-40-6 HCA

CN Poly[(2,5-dihexyl-1,4-phenylene)-1,3-butadiyne-1,4-diyl] (9CI) (CA INDEX NAME)



CC 35-7 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 73

IT **Luminescence**

(of poly(arylenealkynylenes))

IT 167319-27-9P, (2,5-Dihexyl-4-iodophenyl)acetylene homopolymer
 167319-28-0P, (2,5-Dihexyl-4-iodophenyl)acetylene homopolymer sru
 167319-30-4P, [3-(Hexyloxy)-5-iodophenyl]acetylene homopolymer
 167319-31-5P, [3-(Hexyloxy)-5-iodophenyl]acetylene homopolymer sru
 167319-33-7P, (3-Hexyl-5-iodophenyl)acetylene homopolymer
 167319-34-8P, (3-Hexyl-5-iodophenyl)acetylene homopolymer sru
 167319-36-0P, (3-tert-Butyl-5-iodophenyl)acetylene homopolymer
 167319-37-1P, (3-tert-Butyl-5-iodophenyl)acetylene homopolymer sru
167319-39-3P, 1,4-Diethynyl-2,5-dihexylbenzene homopolymer
167319-40-6P, 1,4-Diethynyl-2,5-dihexylbenzene homopolymer
 sru 167319-42-8P, 1,3-Diethynyl-5-hexylbenzene homopolymer
 167319-43-9P, 1,3-Diethynyl-5-hexylbenzene homopolymer sru
 (prepn. and optical properties of poly(arylenealkynylenes))

L64 ANSWER 11 OF 14 HCA COPYRIGHT 2004 ACS on STN

123:10174 Spectrophotometric determination of phenyl-substituted acetylenes and their polymers in the form of chloranil complexes. Obtemperanskaya, S. I.; Buzlanova, M. M.; Karandi, I. V.; Shakhid, Rashid; Kashin, A. N. (Moscow State Univ., Moscow, 119899, Russia). Journal of Analytical Chemistry (Translation of Zhurnal Analiticheskoi Khimii), 50(4), 394-6 (English) 1995. CODEN: JACTE2. ISSN: 1061-9348. Publisher: MAIK Nauka/Interperiodica.

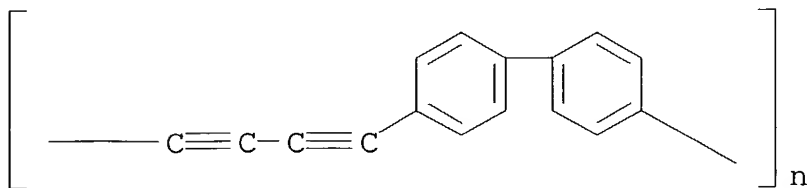
AB A spectrophotometric method for detg. Ph-substituted acetylene compds. and their polymers in the form of charge-transfer chloranil (I) complexes permits detn. of the compds. in the range of 10⁻⁷ to 10⁻³ M. The Ph-substituted acetylene compds. reacted with I to form colored compds. with a max. of the absorption band in the region of 440 nm.

IT **121265-60-9**

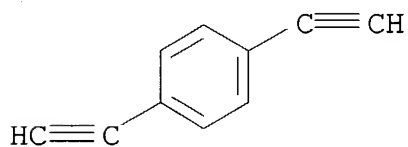
(spectrophotometric detn. of phenyl-substituted acetylenes and their polymers in form of chloranil complexes)

RN 121265-60-9 HCA

CN Poly([1,1'-biphenyl]-4,4'-diyl-1,3-butadiyne-1,4-diyl) (9CI) (CA INDEX NAME)



- CC 35-10 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 80
- IT 536-74-3, Phenylacetylene 886-66-8, Diphenyldiacetylene
7223-38-3, Propargyldimethylamine **121265-60-9**
164079-99-6
(spectrophotometric detn. of phenyl-substituted acetylenes and
their polymers in form of chloranil complexes)
- L64 ANSWER 12 OF 14 HCA COPYRIGHT 2004 ACS on STN
- 111:115782 Polymerization of p-diethynylbenzene in the presence of
trivalent phosphorus compounds. Gasparyan, G. Ts.; Durgaryan, N.
A.; Ovakimyan, M. Zh.; Indzhikyan, M. G. (Inst. Org. Khim., Yerevan,
USSR). Armyanskii Khimicheskii Zhurnal, 41(11), 716-17 (Russian)
1988. CODEN: AYKZAN. ISSN: 0515-9628.
- AB p-Diethynylbenzene underwent polymn. in the presence of Bu3P with
formation of a polyconjugated semiconductive polymer (elec. cond.
6.1 + 10⁻⁸ Ω⁻¹ cm⁻¹). At 90°, the reaction was
rapid, exothermic, and accompanied by **luminescence**. The
polymn. proceeded also in the presence of other trivalent P compds.,
viz., Ph3P, tris(dimethylamido)phosphite, and (EtO)3P. The polymn.
apparently occurred through formation of an intermediate
β-phosphobetaine, but attempts to isolate the intermediate were
unsuccessful.
- IT **26713-43-9P**, Poly(p-diethynylbenzene)
(prepn. of elec. conductive, in presence of trivalent phosphorus
catalysts)
- RN 26713-43-9 HCA
- CN Benzene, 1,4-diethynyl-, homopolymer (9CI) (CA INDEX NAME)
- CM 1
- CRN 935-14-8
- CMF C10 H6



- CC 35-3 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 36
- IT **26713-43-9P**, Poly(p-diethynylbenzene)
(prepn. of elec. conductive, in presence of trivalent phosphorus
catalysts)
- L64 ANSWER 13 OF 14 HCA COPYRIGHT 2004 ACS on STN

111:24019 New rigid-rod monomers and polymers. Wu, Xiaosong; Dirlikov, Stoil K. (Coat. Res. Inst., East. Michigan Univ., Ypsilanti, MI, 48197, USA). Polymeric Materials Science and Engineering, 60, 762-6 (English) 1989. CODEN: PMSE DG. ISSN: 0743-0515.

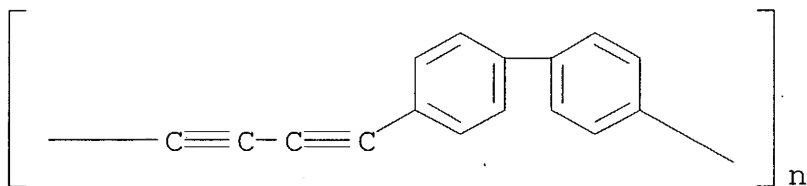
AB Prepn. of five monomers, HC.tplbond.CRC.tplbond.CH (R = p-phenylene, 2,5-dimethyl-p-phenylene, tetrafluoro-p-phenylene, 4,4'-biphenylene, and octafluoro-4,4'-biphenylene), and polymn. by Glaser coupling to form rigid-rod polymers with triple-bond linkages are reported. The d.p. is estd. to be >20 and most of the polymer remains in soln. There is no difference between the IR spectra of sol. and insol. fractions of the polymers, indicating that no crosslinking has taken place in the insol. fraction.

IT 121265-60-9P

(prepn. of, by Glaser coupling of diacetylenic monomer)

RN 121265-60-9 HCA

CN Poly([1,1'-biphenyl]-4,4'-diyl-1,3-butadiyne-1,4-diyl) (9CI) (CA INDEX NAME)



CC 35-5 (Chemistry of Synthetic High Polymers)

IT 28729-99-9P 121265-59-6P 121265-60-9P 121265-61-0P
121281-09-2P

(prepn. of, by Glaser coupling of diacetylenic monomer)

L64 ANSWER 14 OF 14 HCA COPYRIGHT 2004 ACS on STN

108:95022 Studies on diacetylenic vinyl compounds. II.

Copolymerization of phenyl-4'-vinylphenylbutadiyne with styrene and methyl methacrylate. Castillon, Felipe F.; Navarro, Rosa E.; Ogawa, Takeshi (Cent. Invest. Polim. Mater., Univ. Sonora, Sonora, Mex.). Journal of Polymer Science, Part A: Polymer Chemistry, 26(1), 321-7 (English) 1988. CODEN: JPAC EC. ISSN: 0887-624X.

AB The copolymns. of phenyl-4'-vinylphenylbutadiyne (I) with styrene and Me methacrylate were carried out under various conditions. I was more readily incorporated in copolymn. than the comonomers, but the diacetylenic group of I interacted with the propagating radical, decreasing the polymn. rate and the mol. wt. of copolymer. When the polymn. system became very viscous, crosslinking took place giving light green luminescent gels. The thermal behaviors of the copolymers were also studied.

IT 112986-99-9P 112987-00-5P

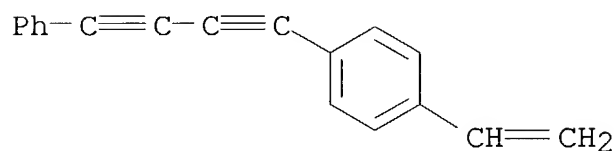
(prepn. and characterization of)

RN 112986-99-9 HCA
CN Benzene, 1-ethenyl-4-(4-phenyl-1,3-butadiynyl)-, polymer with
ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 106643-22-5

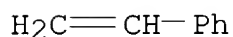
CMF C18 H12



CM 2

CRN 100-42-5

CMF C8 H8

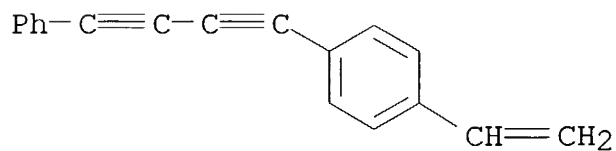


RN 112987-00-5 HCA
CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with
1-ethenyl-4-(4-phenyl-1,3-butadiynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 106643-22-5

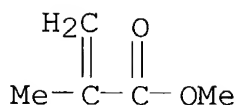
CMF C18 H12



CM 2

CRN 80-62-6

CMF C5 H8 O2



CC 35-4 (Chemistry of Synthetic High Polymers)

IT 54718-97-7P **112986-99-9P 112987-00-5P**
(prepn. and characterization of)

=> d 177 1-4 cbib abs hitstr hitind

L77 ANSWER 1 OF 4 HCA COPYRIGHT 2004 ACS on STN

131:337463 Silylene-tethered divinylarene copolymers: a new class of **electroluminescent** polymer. Luh, Tien-Yau; Chen, Ruey-Min; Deng, Zhenbo; Lee, Shuit-Tong (Department of Chemistry, National Taiwan University, Taipei, 106, Taiwan). ACS Symposium Series, 735(Semiconducting Polymers), 374-383 (English) **1999**. CODEN: ACSMC8. ISSN: 0097-6156. Publisher: American Chemical Society.

AB A new class of electroactive copolymers of silylene-spaced conjugated segments is conveniently synthesized by hydrosilylation bis-vinyl silyl hydrides and bisalkynes. Flexible silylene-divinylbenzene copolymer exhibits strong intrachain aggregation at both ground and excited states leading to longer wavelength emission in the blue light region. More rigid polymers, on the other hand, shows compatible fluorescence spectra as those of the corresponding monomeric model compds. Copolymers contg. triphenylenevinylene-vinylene chromophore can serve as an emitting dopant for the fabrication of a blue-green org. **light emitting diode (LED)**. The peak of the **electroluminescence (EL)** position of the LED device can be blue-shifted with increasing applied voltage. The present observation of the voltage-dependent **EL** emission suggests a new avenue for controlling the color of LEDs.

IT **197500-43-9P**

(prepn. and **electroluminescence** of silylene-tethered divinylarene copolymers: a new class of **electroluminescent** polymer)

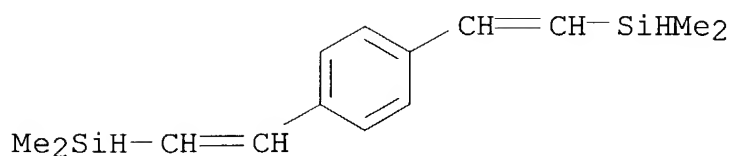
RN 197500-43-9 HCA

CN Silane, (1,4-phenylenedi-2,1-ethenediyl)bis(dimethyl-, polymer with 1,4-diethynylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 197500-38-2

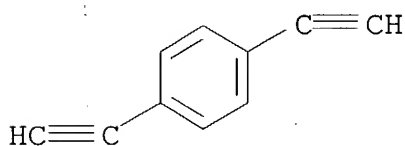
CMF C14 H22 Si2



CM 2

CRN 935-14-8

CMF C10 H6



CC 35-5 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 73, 76

ST silylene divinylarene copolymer prepn **electroluminescence**

IT Polycarbosilanes

Polycarbosilanes

(polycarbosilane-; prepn. and **electroluminescence** of silylene-tethered divinylarene copolymers: a new class of **electroluminescent** polymer)

IT Poly(arylenealkenylenes)

(polycarbosilane-, polyacetylene-; prepn. and **electroluminescence** of silylene-tethered divinylarene copolymers: a new class of **electroluminescent** polymer)

IT Polyacetylenes, preparation

Polyacetylenes, preparation

(polycarbosilane-; prepn. and **electroluminescence** of silylene-tethered divinylarene copolymers: a new class of **electroluminescent** polymer)

IT Polycarbosilanes

(polyphenylenevinylene-, polyacetylene-; prepn. and **electroluminescence** of silylene-tethered divinylarene copolymers: a new class of **electroluminescent** polymer)

IT Poly(arylenealkenylenes)

(polyphenylenevinylenes, polycarbosilane-, polyacetylene-; prepn. and **electroluminescence** of silylene-tethered divinylarene copolymers: a new class of **electroluminescent** polymer)

IT **Electroluminescent** devices

Fluorescence

Luminescence, electroluminescence

Polymerization

- (prepn. and **electroluminescence** of silylene-tethered divinylarene copolymers: a new class of **electroluminescent** polymer)
- IT 197500-38-2P 204577-85-5P 204577-90-2P
(monomer; prepn. and **electroluminescence** of silylene-tethered divinylarene copolymers: a new class of **electroluminescent** polymer)
- IT 197500-43-9P 204577-86-6P 204577-91-3P
(prepn. and **electroluminescence** of silylene-tethered divinylarene copolymers: a new class of **electroluminescent** polymer)
- IT 69922-37-8 122588-50-5 249933-92-4 249933-93-5
(starting material; prepn. and **electroluminescence** of silylene-tethered divinylarene copolymers: a new class of **electroluminescent** polymer)

L77 ANSWER 2 OF 4 HCA COPYRIGHT 2004 ACS on STN

131:337387 Highly efficient palladium catalyst system for addition of trihydrosilanes to acetylenes and its application to thermally stable polycarbosilane synthesis. Yamashita, Hiroshi; Uchimaru, Yuko (National Institute of Materials and Chemical Research, Tsukuba, Ibaraki, Japan). Chemical Communications (Cambridge) (17), 1763-1764 (English) 1999. CODEN: CHCOFS. ISSN: 1359-7345. Publisher: Royal Society of Chemistry.

AB Regio- and stereo-selective mono-, di- and tri-alkenylation of trihydrosilanes with monoynes proceeded smoothly with a Pd-PCy3 catalyst, while the reaction of phenylsilane with 1,4-diethynylbenzene provided a thermally stable and blue light emissive polycarbosilane.

IT 165047-89-2P, 1,4-Diethynylbenzene-phenylsilane copolymer
(palladium catalyst for addn. of trihydrosilanes to acetylenes and prepn. of thermally stable polycarbosilanes)

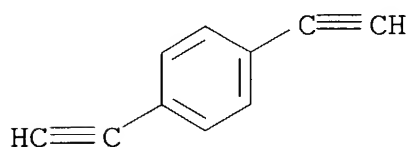
RN 165047-89-2 HCA

CN Silane, phenyl-, polymer with 1,4-diethynylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 935-14-8

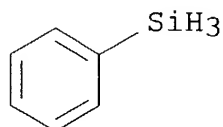
CMF C10 H6



CM 2

CRN 694-53-1

CMF C6 H8 Si



CC 35-3 (Chemistry of Synthetic High Polymers)

IT Crosslinking

Heat-resistant materials

Hydrosilylation catalysts

Luminescence

Polymerization catalysts

(palladium catalyst for addn. of trihydrosilanes to acetylenes and prepn. of thermally stable polycarbosilanes)

IT 165047-89-2P, 1,4-Diethynylbenzene-phenylsilane copolymer

(palladium catalyst for addn. of trihydrosilanes to acetylenes and prepn. of thermally stable polycarbosilanes)

L77 ANSWER 3 OF 4 HCA COPYRIGHT 2004 ACS on STN

131:235518 Boron-containing π -conjugated polymer and **light-emitting** material and nonlinear optical material containing the polymer. Nakajo, Yoshiki; Naka, Kensuke; Matsumi, Noriyoshi (TDK Electronics Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11255902 A2 19990921 Heisei, 22 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-80193 19980312.

AB The B-contg. π -conjugated polymer is that prepd. by hydroboration polymn. of monoallylboranes and arom. diyns. The **light-emitting** material and the nonlinear optical material contains the polymer and the materials show improved environment resistance.

IT 207924-53-6P

(boron-contg. π -conjugated polymer prepd. by hydroboration polymn. of monoarylboranes and arom. diyns for **light-emitting** material and nonlinear optical material)

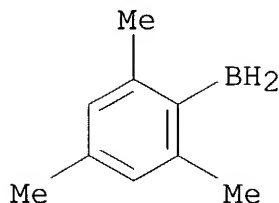
RN 207924-53-6 HCA

CN Borane, (2,4,6-trimethylphenyl)-, polymer with 1,4-diethynylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 45741-00-2

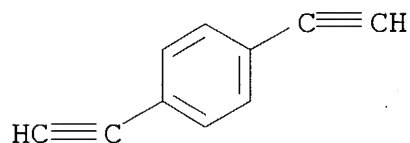
CMF C9 H13 B



CM 2

CRN 935-14-8

CMF C10 H6



- IC ICM C08G079-08
ICS C09K011-06; G02F001-35
- CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 35, 38
- ST boron contg pi conjugated polymer; hydroboration polymn monoarylborane arom diyn; **light emitting** material pi conjugated polymer; nonlinear optical material pie conjugated polymer; environment resistance nonlinear optical material
- IT Nonlinear optical materials
(boron-contg. π -conjugated polymer prepd. by hydroboration polymn. of monoarylboranes and arom. diyns for **light-emitting** material and nonlinear optical material)
- IT Phosphors
(**electroluminescent**; boron-contg. π -conjugated polymer prepd. by hydroboration polymn. of monoarylboranes and arom. diyns for **light-emitting** material and nonlinear optical material)
- IT Polymerization
(hydroboration; boron-contg. π -conjugated polymer prepd. by hydroboration polymn. of monoarylboranes and arom. diyns for **light-emitting** material and nonlinear optical material)
- IT Hydroboration
(polymn.; boron-contg. π -conjugated polymer prepd. by

hydroboration polymn. of monoarylboranes and arom. diynes for **light-emitting** material and nonlinear optical material)

- IT 207924-53-6P 207924-54-7P 207924-56-9P 207924-57-0P
207924-58-1P 207924-59-2P 207924-60-5P 207924-61-6P
(boron-contg. π -conjugated polymer prepd. by hydroboration polymn. of monoarylboranes and arom. diynes for **light-emitting** material and nonlinear optical material)
- IT 935-14-8P 18512-55-5P 38215-38-2P 45741-00-2P, Mesitylborane
94463-11-3P
(monomer; boron-contg. π -conjugated polymer prepd. by hydroboration polymn. of monoarylboranes and arom. diynes for **light-emitting** material and nonlinear optical material)

L77 ANSWER 4 OF 4 HCA COPYRIGHT 2004 ACS on STN

129:28297 Extension of π -Conjugation Length via the Vacant p-Orbital of the Boron Atom. Synthesis of Novel Electron Deficient π -Conjugated Systems by Hydroboration Polymerization and Their Blue **Light Emission**. Matsumi, Noriyoshi; Naka, Kensuke; Chujo, Yoshiki (Department of Polymer Chemistry, Kyoto University, Kyoto, 606-8501, Japan). Journal of the American Chemical Society, 120(20), 5112-5113 (English) 1998.
CODEN: JACSAT. ISSN: 0002-7863. Publisher: American Chemical Society.

AB Well-defined organoboron π -conjugated polymers were synthesized by hydroboration polymn. of arom. diynes with mesitylborane. The polymers obtained have dialkenylmesitylborane units in their main-chain and can be regarded as a polymer homolog of triarylborane which is known as a good electron acceptor. These polymers, therefore, can be expected as a new n-type conjugated polymers having high electron affinity. A series of organoboron conjugated polymers was prepd. by adding a slightly excess amt. of mesitylborane dropwise to a diyne monomer in THF at room temp. From the gel permeation chromatog. anal., the no. av. mol. wts. of these polymers were found to be several thousands. The UV-vis spectrum of the polymer prepd. from 1,4-diethynylbenzene had its λ_{\max} at 399 nm due to π - π^* transition. This result suggests that π -conjugation length was highly extended via boron atom. In the fluorescence emission spectra of these polymers, an intense emission was obsd. in a visible blue region. The small Stokes shift indicates that the present polymers have relatively rigid structures.

IT 207924-53-6P, 1,4-Diethynylbenzene-mesitylborane copolymer
(synthesis of electron deficient π -conjugated systems by hydroboration polymn. of arom. diynes and their blue **light emission**)

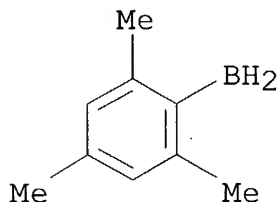
RN 207924-53-6 HCA

CN Borane, (2,4,6-trimethylphenyl)-, polymer with 1,4-diethynylbenzene
(9CI) (CA INDEX NAME)

CM 1

CRN 45741-00-2

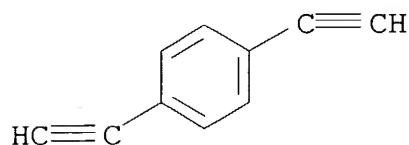
CMF C9 H13 B



CM 2

CRN 935-14-8

CMF C10 H6



CC 35-7 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 36, 73

IT Fluorescence

(blue; synthesis of electron deficient π -conjugated systems by hydroboration polymn. of arom. diynes and their blue **light emission**)

IT Polymers, preparation

(conjugated, n-type; synthesis of electron deficient π -conjugated systems by hydroboration polymn. of arom. diynes and their blue **light emission**)

IT Polymerization

(hydroboration; synthesis of electron deficient π -conjugated systems by hydroboration polymn. of arom. diynes and their blue **light emission**)

IT Thermogravimetric analysis

UV and visible spectra

(synthesis of electron deficient π -conjugated systems by hydroboration polymn. of arom. diynes and their blue **light emission**)

IT Polyacetylenes, preparation

(synthesis of electron deficient π -conjugated systems by hydroboration polymn. of arom. diynes and their blue light emission)

IT 207924-62-7

(model compd.; synthesis of electron deficient π -conjugated systems by hydroboration polymn. of arom. diynes and their blue light emission)

IT 207924-53-6P, 1,4-Diethynylbenzene-mesitylborane copolymer
207924-54-7P, 1,4-Diethynylbenzene-mesitylborane copolymer, sru
207924-56-9P, 4,4'-Diethynylbiphenyl-mesitylborane copolymer
207924-57-0P, 4,4'-Diethynylbiphenyl-mesitylborane copolymer, sru
207924-58-1P 207924-59-2P 207924-60-5P, 9,10-Diethynylanthracene-mesitylborane copolymer 207924-61-6P, 9,10-Diethynylanthracene-mesitylborane copolymer, sru

(synthesis of electron deficient π -conjugated systems by hydroboration polymn. of arom. diynes and their blue light emission)

=> d 165 1-13 cbib abs hitstr hitind *(Structurally may not be close enough to what you need.)*

L65 ANSWER 1 OF 13 HCA COPYRIGHT 2004 ACS on STN

132:334984 Alkyne metathesis with simple catalyst systems. An access to novel hydrocarbon architectures. Pschirer, Neil G.; Bunz, Uwe H. F. (Department of Chemistry and Biochemistry, The University of South Carolina, Columbia, SC, 29208, USA). Polymer Preprints (American Chemical Society, Division of Polymer Chemistry), 41(1), 405-406 (English) 2000. CODEN: ACPPAY. ISSN: 0032-3934.

Publisher: American Chemical Society, Division of Polymer Chemistry.

AB 3,7-Di-tert-butyl-1,5-dipropynylnaphthalene monomer units were introduced to a poly(p-phenylenethynylene)-type polymer (PPE) by metathesis copolymn. using molybdenum hexacarbonyl as catalyst. The PPE polymer having the naphthalene-based comonomer showed strong blue-white fluorescence in the solid state and has potential to be used as active layers in light-emitting diodes.

IT 268212-62-0P

(prepn. of naphthalene-based comonomer-contg. PPE polymers by metathesis polymn.)

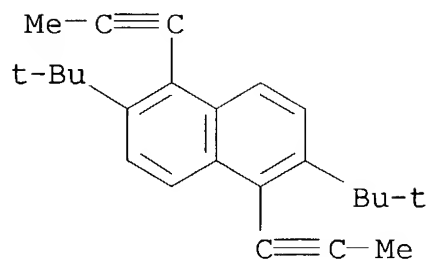
RN 268212-62-0 HCA

CN Naphthalene, 2,6-bis(1,1-dimethylethyl)-1,5-di-1-propynyl-, polymer with 1,4-didodecyl-2,5-di-1-propynylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 268212-60-8

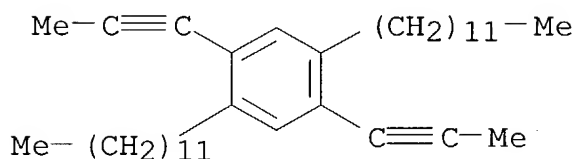
CMF C24 H28



CM 2

CRN 219628-01-0

CMF C36 H58



CC 35-7 (Chemistry of Synthetic High Polymers)

ST polyphenyleneethynylene naphthalene based unit contg prepn
light emission; dipropynylnaphthalene dibutyl
 comonomer **light emitting** polyphenyleneethynylene

IT Fluorescent substances
 (light-emitting naphthalene-based
 comonomer-contg. PPE polymers)

IT 268212-62-0P

(prepn. of naphthalene-based comonomer-contg. PPE polymers by
 metathesis polymn.)

L65 ANSWER 2 OF 13 HCA COPYRIGHT 2004 ACS on STN

132:167049 Phase behavior and anisotropic optical properties of
photoluminescent polarizers. Montali, A.; Palmans, A. R.
 A.; Eglin, M.; Weder, Ch.; Smith, Paul; Trabesinger, W.; Renn, A.;
 Hecht, B.; Wild, U. P. (Department of Materials, Institute of
 Polymers, Zurich, Switz.). Polymer Preprints (American Chemical
 Society, Division of Polymer Chemistry), 40(2), 1169-1170 (English)
1999. CODEN: ACPPAY. ISSN: 0032-3934. Publisher: American
 Chemical Society, Division of Polymer Chemistry.

AB Color liq.-crystal displays (LCDs) suffer from limited brightness
 and energy efficiency, originating from the use of absorbing
 polarizers and color filters. **Photoluminescent** (PL)
 polarizers consisting of uniaxially oriented blends of a PL polymer

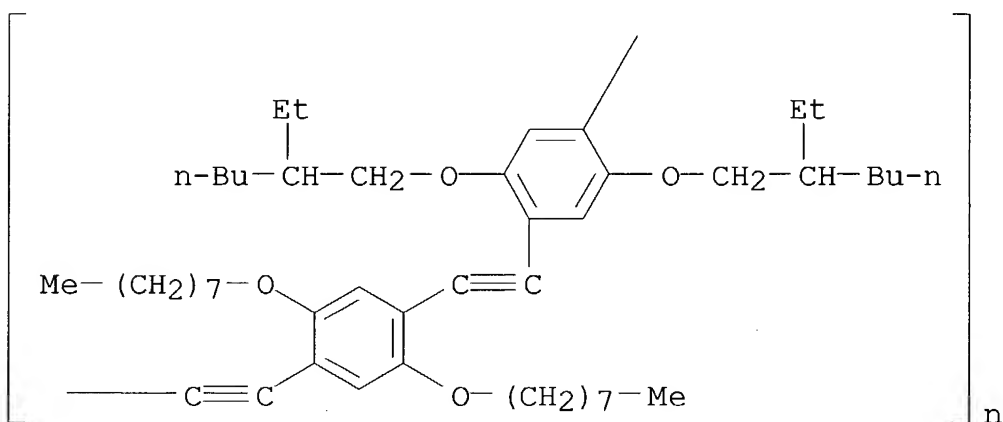
and ultra-high-mol.-wt. polyethylene (UHMW-PE), which, after photoexcitation, absorb and **emit light** in a highly linearly polarized fashion, were presented as a possibility to increase the efficiency, brightness and viewing angle of LCDs. The solid-state structure of the gel-processed PL polarizers and its relation to the anisotropic absorbance and emission properties of PL polarizers was investigated. Results of measurements carried out with scanning confocal optical microscopy (SCOM) on a single-mol. scale as well as steady-state fluorescence and absorption spectroscopy carried out on gel processed films will be presented. Furthermore, a new exptl. approach involving PL oligomers blended in melt-processable polyethylene will be presented. Already at relatively low draw ratios (~10), these blends exhibit an exceptionally high degree of linear polarization in emission (dichroic ratios >50).

IT 174592-87-1

(polyethylene blends; phase behavior and anisotropic optical properties of **photoluminescent** polarizers)

RN 174592-87-1 HCA

CN Poly[[2,5-bis[(2-ethylhexyl)oxy]-1,4-phenylene]-1,2-ethynediyl[2,5-bis(octyloxy)-1,4-phenylene]-1,2-ethynediyl] (9CI) (CA INDEX NAME)



CC 37-5 (Plastics Manufacture and Processing)

ST phase behavior anisotropic optical **photoluminescent** polarizer; polyethylene blend anisotropic optical **photoluminescent** polarizer; LLDPE blend anisotropic optical **photoluminescent** polarizer; polyphenyleneethynylene deriv blend phase behavior **photoluminescent**; ethynylbenzene deriv blend phase behavior **photoluminescent**

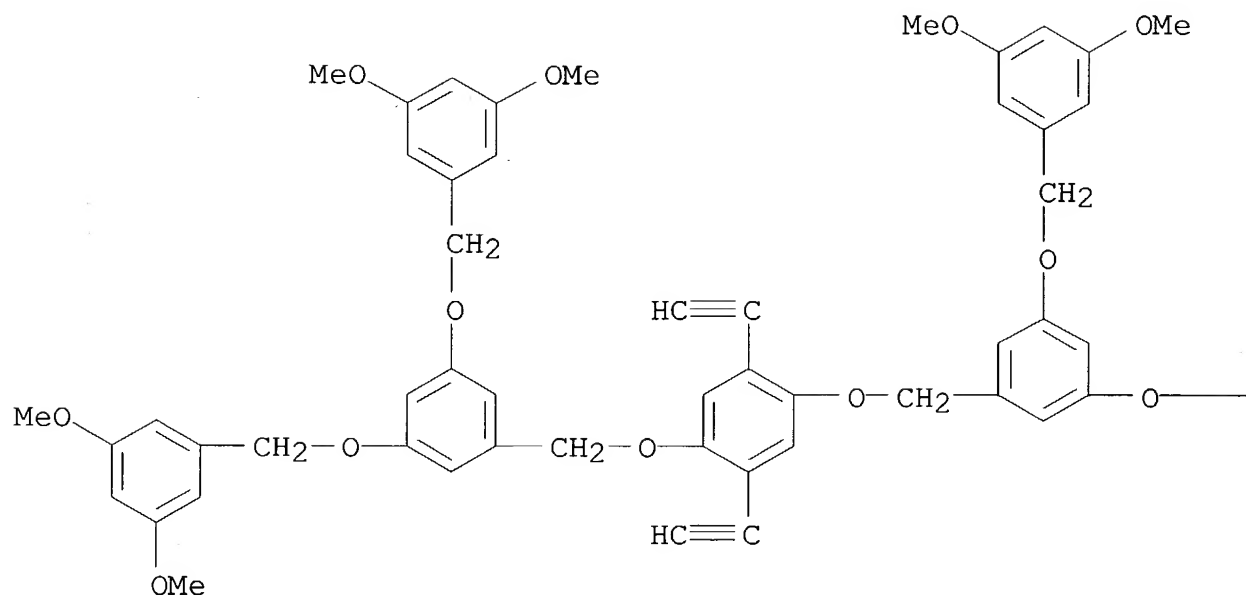
IT **Luminescence**

(phase behavior and anisotropic optical properties of **photoluminescent** polarizers)

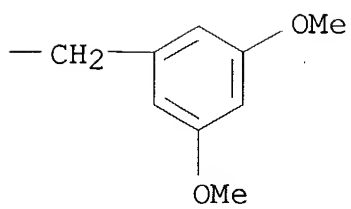
IT Polymer blends

- (phase behavior and anisotropic optical properties of **photoluminescent** polarizers)
- IT Dichroism
(photoinduced; phase behavior and anisotropic optical properties of **photoluminescent** polarizers)
- IT 248590-34-3
(LLDPE blends; phase behavior and anisotropic optical properties of **photoluminescent** polarizers)
- IT 26221-73-8, Dowlex NG5056E
(bis(dodecyloxyphenylethynyl)benzene blends; phase behavior and anisotropic optical properties of **photoluminescent** polarizers)
- IT 9002-88-4, GUR 412
(poly(dialkoxyphenyleneethynylene) deriv. blends; phase behavior and anisotropic optical properties of **photoluminescent** polarizers)
- IT 174592-87-1
(polyethylene blends; phase behavior and anisotropic optical properties of **photoluminescent** polarizers)
- L65 ANSWER 3 OF 13 HCA COPYRIGHT 2004 ACS on STN
132:36373 A Blue-**Luminescent** Dendritic Rod:
Poly(phenyleneethynylene) within a Light-Harvesting Dendritic Envelope. Sato, Takafumi; Jiang, Dong-Lin; Aida, Takuzo (Department of Chemistry and Biotechnology Graduate School of Engineering, The University of Tokyo, Bunkyo-ku Tokyo, 113-8656, Japan). Journal of the American Chemical Society, 121(45), 10658-10659 (English) 1999. CODEN: JACSAT. ISSN: 0002-7863. Publisher: American Chemical Society.
- AB A series of poly(phenyleneethynylene) dendrimers were synthesized and their optical characteristics were reported. This the first blue-**luminescent** dendritic rod consisting of a rigid poly(phenyleneethynylene) conjugated backbone wrapped with the flexible poly(benzyl ether) dendritic envelope.
- IT 252273-92-0P 252273-94-2P 252273-96-4P 252273-97-5P
(prepn. and characterization of blue-**luminescent** poly(phenyleneethynylenes) within light-harvesting dendritic envelope)
- RN 252273-92-0 HCA
CN Benzene, 1,4-bis[[3,5-bis[(3,5-dimethoxyphenyl)methoxy]phenyl]methoxy]-2,5-diethynyl-, polymer with 1,4-diiodobenzene (9CI) (CA INDEX NAME)
- CM 1
- CRN 252273-91-9
CMF C60 H58 O14

PAGE 1-A

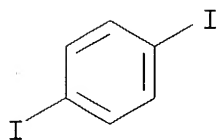


PAGE 1-B



CRN 624-38-4

CMF C6 H4 I2



RN 252273-94-2 HCA

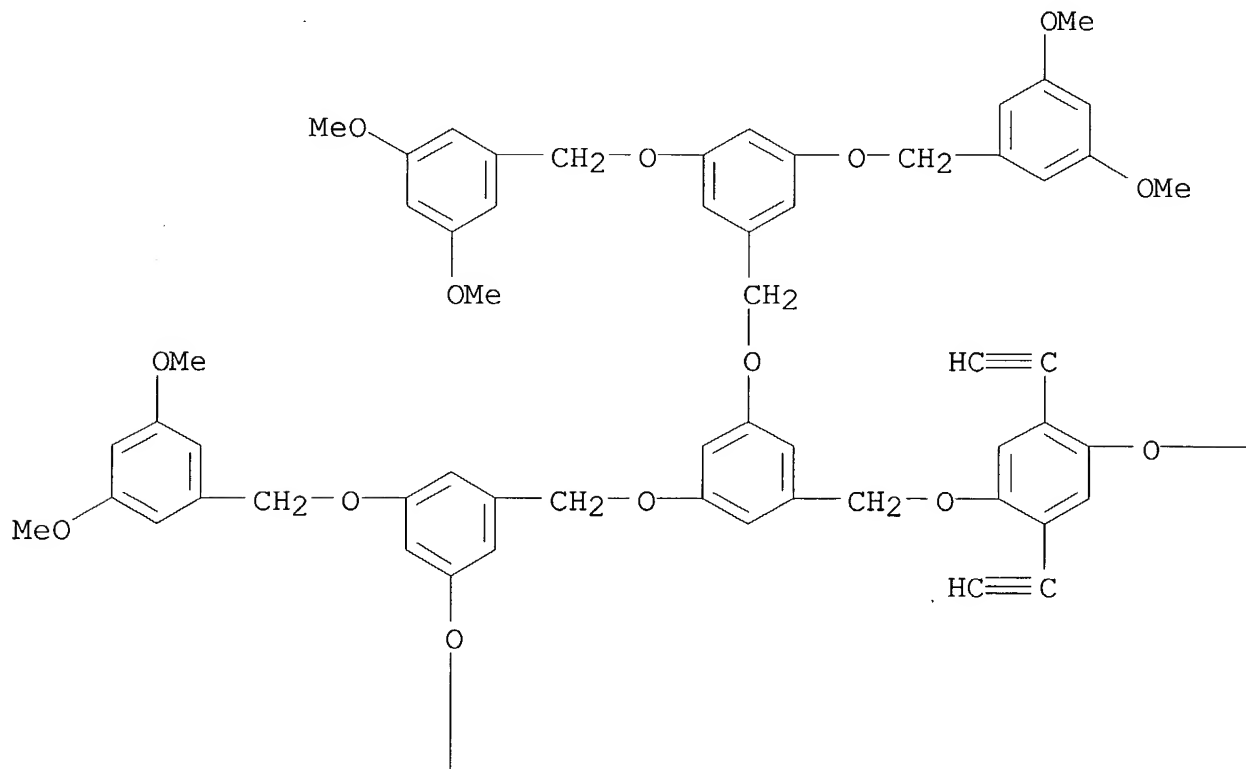
CN Benzene, 1,4-bis[[3,5-bis[[3,5-bis[(3,5-dimethoxyphenyl)methoxy]phenyl]methoxy]phenyl]methoxy]-2,5-diethynyl-, polymer with 1,4-diiodobenzene (9CI) (CA INDEX NAME)

CM 1

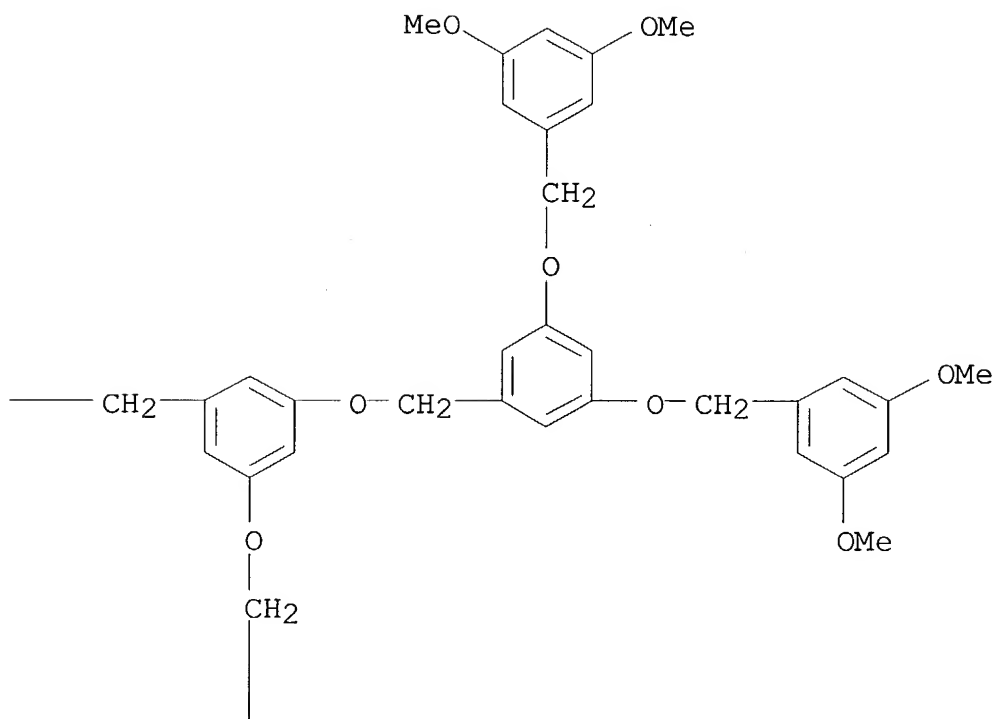
CRN 252273-93-1

CMF C124 H122 O30

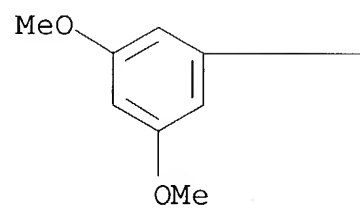
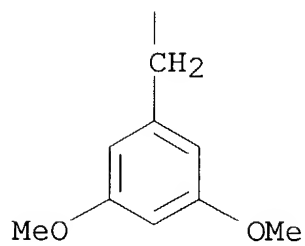
PAGE 1-A



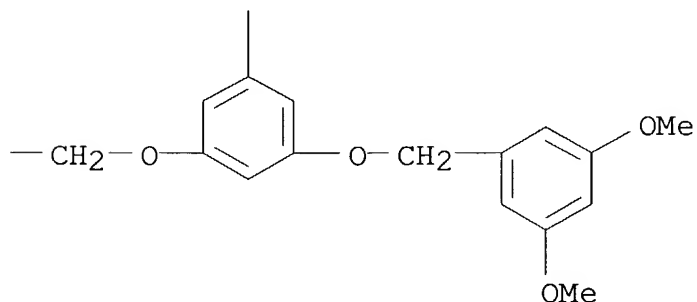
PAGE 1-B



PAGE 2-A



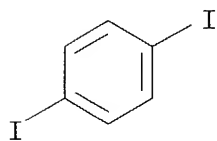
PAGE 2-B



CM 2

CRN 624-38-4

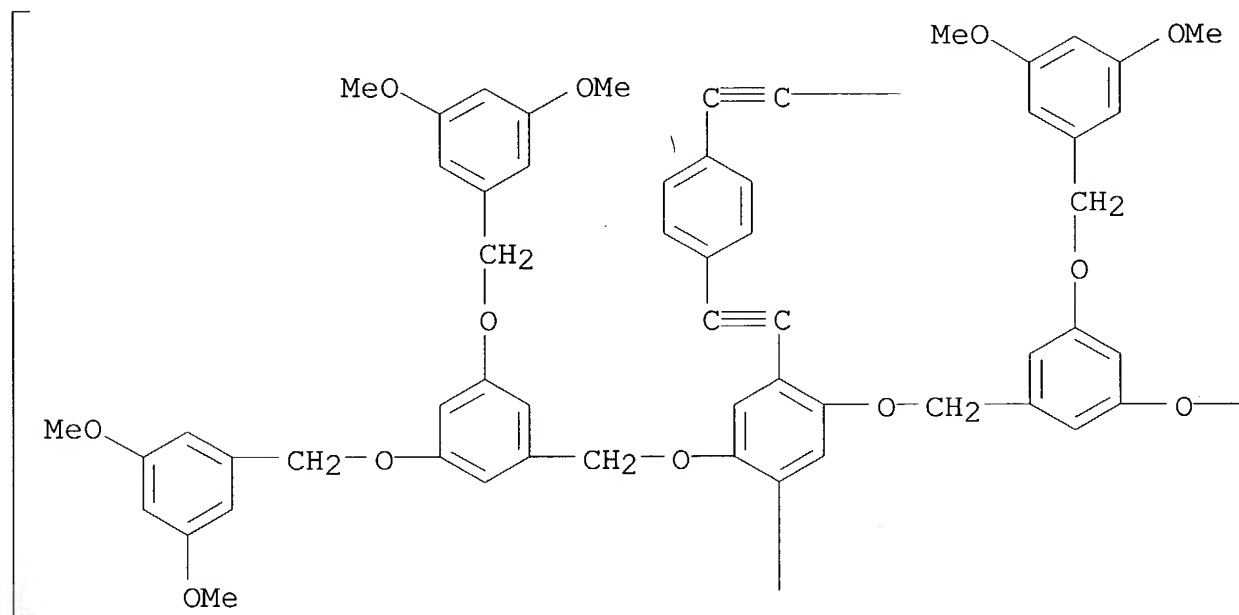
CMF C6 H4 I2



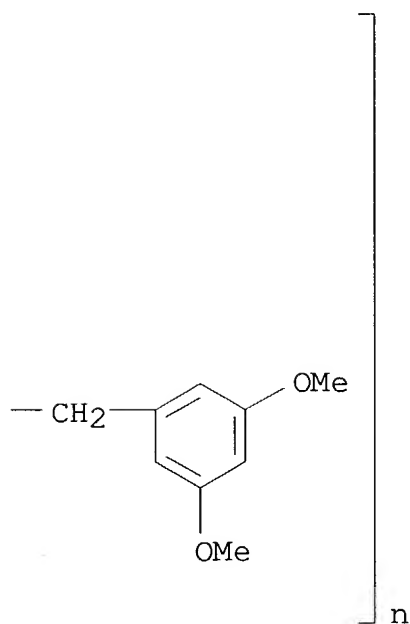
RN 252273-96-4 HCA

CN Poly[[2,5-bis[[3,5-bis[(3,5-dimethoxyphenyl)methoxy]phenyl]methoxy]-1,4-phenylene]-1,2-ethynediyl-1,4-phenylene-1,2-ethynediyl] (9CI)
(CA INDEX NAME)

PAGE 1-A



PAGE 1-B



RN 252273-97-5 HCA
CN Poly[[2,5-bis[[3,5-bis[[3,5-bis[(3,5-dimethoxyphenyl)methoxy]phenyl]methoxy]phenyl]methoxy]-1,4-phenylene]-1,2-ethynediyl-1,4-phenylene-1,2-ethynediyl] (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

CC 37-3 (Plastics Manufacture and Processing)
Section cross-reference(s): 38, 73
ST blue **luminescent** dendritic rod polyphenyleneethynylene;
polyacetylene blue **luminescent** dendritic polybenzyl ether
IT **Electroluminescent** devices
(blue-emitting; prepn. and characterization of blue-
luminescent poly(phenyleneethynylenes) within
light-harvesting dendritic envelope)
IT Polyethers, preparation
Polyethers, preparation
(dendrimers, polyphenyleneacetylene derivs.; prepn. and
characterization of blue-**luminescent**
poly(phenyleneethynylenes) within light-harvesting dendritic
envelope)
IT Polyacetylenes, preparation
Polyacetylenes, preparation
(dendrimers; prepn. and characterization of blue-
luminescent poly(phenyleneethynylenes) within
light-harvesting dendritic envelope)
IT Dendritic polymers
Dendritic polymers
(polyacetylenes; prepn. and characterization of blue-
luminescent poly(phenyleneethynylenes) within
light-harvesting dendritic envelope)

- IT Dendritic polymers
Dendritic polymers
(polyethers, polyphenyleneacetylene derivs.; prepn. and characterization of blue-**luminescent** poly(phenyleneethynylenes) within light-harvesting dendritic envelope)
- IT Electronic excitation
Fluorescence
(prepn. and characterization of blue-**luminescent** poly(phenyleneethynylenes) within light-harvesting dendritic envelope)
- IT 129371-31-9DP, Me ethers, phenylenediacetylene derivs., polymer with p-diiodobenzene
(dendritic; prepn. and characterization of blue-**luminescent** poly(phenyleneethynylenes) within light-harvesting dendritic envelope)
- IT 624-38-4DP, polymers with arom. polyether dendron-modified phenylenediacetylenes, Me ethers 935-14-8DP, arom. polyether dendron-derivs., polymers with p-diiodobenzene, Me ethers
252273-92-0P 252273-94-2P 252273-96-4P 252273-97-5P
(prepn. and characterization of blue-**luminescent** poly(phenyleneethynylenes) within light-harvesting dendritic envelope)
- IT 624-38-4, 1,4-Diiodobenzene 75610-48-9 152811-37-5 176650-93-4
252273-95-3
(prepn. and characterization of blue-**luminescent** poly(phenyleneethynylenes) within light-harvesting dendritic envelope)

L65 ANSWER 4 OF 13 HCA COPYRIGHT 2004 ACS on STN

131:323232 Ultra-high performance **photoluminescent** polarizers based on melt-processed polymer blends. Eglin, Michael; Montali, Andrea; Palmans, Anja R. A.; Tervoort, Theo; Smith, Paul; Weder, Christoph (Department of Materials, Institute of Polymers, ETH Zurich, Zurich, CH-8092, Switz.). Journal of Materials Chemistry, 9(9), 2221-2226 (English) 1999. CODEN: JMACEP. ISSN: 0959-9428. Publisher: Royal Society of Chemistry.

AB **Photoluminescent** polarizers that comprise uniaxially oriented **photoluminescent** species which absorb and **emit light** in highly linearly polarized fashion, can efficiently combine the polarization of light and the generation of bright colors. We here report the prepn. and characterization of such polarizers by simple melt-processing and solid-state deformation of blends of a **photoluminescent** guest and a thermoplastic matrix polymer. The orientation behavior of a poly(2,5-dialkoxy-p-phenyleneethynylene) deriv. (EHO-OPPE), 1,4-bis(phenylethynyl)benzene, 1,4-bis(4-

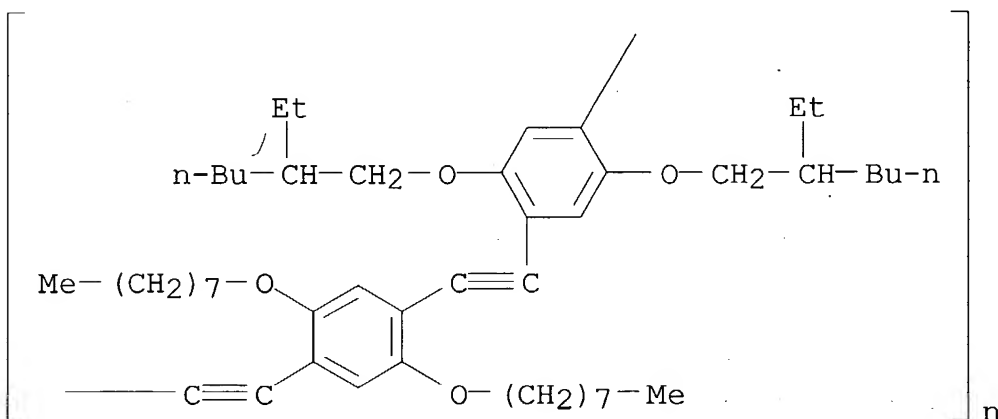
dodecyloxyphenylethynyl)benzene was systematically compared in different polyethylene grades. Expts. suggest that if phase-sepn. between the **photoluminescent** guest and the matrix polymer is reduced during the prepn. of the pristine (i.e. unstretched) blend films, **photoluminescent** polarizers can be produced which exhibit unusually high dichroic properties at minimal draw ratios. In connection with this finding, an optimized, melt-processed blend based on 1,4-bis(4-dodecyloxyphenylethynyl)benzene and linear low-d. polyethylene was developed that allows efficient manufg. of **photoluminescent** polarizers which at draw ratios of only 10 exhibit dichroic ratios exceeding 50.

IT 174592-87-1

(ultra-high performance **photoluminescent** polarizers based on melt-processed polyethylene blends with)

RN 174592-87-1 HCA

CN Poly[[2,5-bis[(2-ethylhexyl)oxy]-1,4-phenylene]-1,2-ethynediyl[2,5-bis(octyloxy)-1,4-phenylene]-1,2-ethynediyl] (9CI) (CA INDEX NAME)



CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 38, 73

ST **photoluminescent** polarizer polyethylene blend; LLDPE **photoluminescent** polarizer blend; polyphenylene polyacetylene **photoluminescent** polarizer polyethylene blend; phenylethynylbenzene **photoluminescent** polarizer polyethylene blend; dodecyloxyphenylethynylbenzene **photoluminescent** polarizer polyethylene blend

IT Dichroism

(photoinduced; ultra-high performance **photoluminescent** polarizers based on melt-processed polymer blends)

IT **Luminescence**

(ultra-high performance **photoluminescent** polarizers based on melt-processed polymer blends)

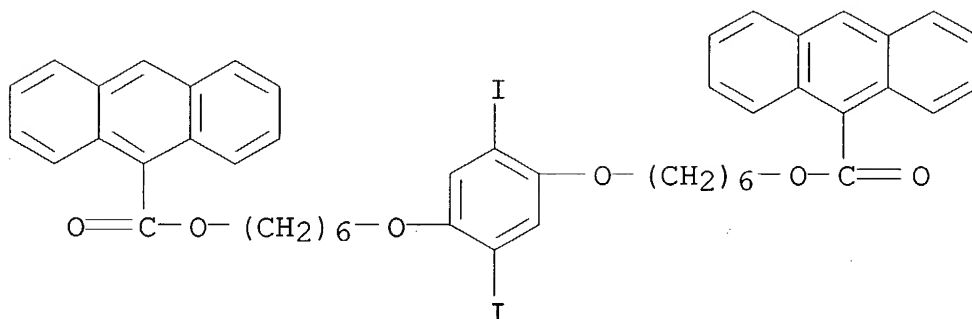
- IT Polymer blends
(ultra-high performance **photoluminescent** polarizers
based on melt-processed polymer blends)
- IT 25087-34-7
(310R; ultra-high performance **photoluminescent**
polarizers based on melt-processed polyethylene blends)
- IT 26221-73-8, Ethylene-1-octene copolymer
(linear low-d.; ultra-high performance **photoluminescent**
polarizers based on melt-processed polymer blends)
- IT 1849-27-0, 1,4-Bis(phenylethynyl)benzene
(ultra-high performance **photoluminescent** polarizers
based on melt-processed polyethylene blends with)
- IT 174592-87-1 248590-34-3
(ultra-high performance **photoluminescent** polarizers
based on melt-processed polyethylene blends with)
- IT 9002-88-4, HD 8621
(ultra-high performance **photoluminescent** polarizers
based on melt-processed polymer blends)
- L65 ANSWER 5 OF 13 HCA COPYRIGHT 2004 ACS on STN
- 131:170713 Polarizing Energy Transfer in **Photoluminescent**
Conjugated Polymers with Covalently Attached Sensitizers. Palmans,
Anja R. A.; Smith, Paul; Weder, Christoph (Department of Materials
Institute of Polymers, ETH Zuerich, Zurich, CH-8092, Switz.).
Macromolecules, 32(14), 4677-4685 (English) 1999. CODEN:
MAMOBX. ISSN: 0024-9297. Publisher: American Chemical Society.
- AB A class of poly(p-phenylene ethynylene) (PPE) polymers, COU-OPPE and
ANT-OPPE, were prep'd., in which coumarin- and anthracene-based
sensitizer mols. are covalently linked to the conjugated polymer
backbone via a flexible spacer. In dil. solns. of these polymers,
efficient resonance energy transfer is obsd. from the sensitizer
moieties to the PPE backbone, resulting in enhanced
luminescence of the PPE macromols. When incorporated as
guests in oriented polyethylene films, the novel polymers, COU-OPPE
and ANT-OPPE, show efficient energy transfer from the pendent
sensitizer to the PPE backbone. Esp. in the case of ANT-OPPE, the
PPE backbone is efficiently oriented while the anthracene moiety
remains essentially isotropic, which results in a high degree of
polarizing energy transfer for this system. The properties of these
conjugated polymers are suitable for use in **light-**
emitting diodes (LED's).
- IT 238421-18-6P 238421-20-0P
(ANT-OPPE; prepn. of sensitizer-contg. monomers and
poly(phenyl-acetylene) **photoluminescent** conjugated
polymers with enhanced polarizing energy transfer)
- RN 238421-18-6 HCA
- CN 9-Anthracenecarboxylic acid, (2,5-diiodo-1,4-phenylene)bis(oxy-6,1-
hexanediyl) ester, polymer with 1,4-diethynyl-2,5-

bis(octyloxy)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 238421-17-5

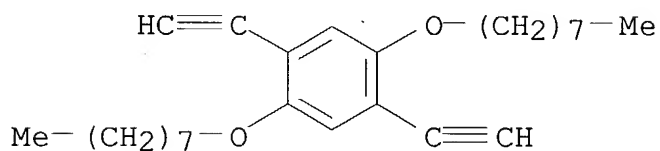
CMF C48 H44 I2 O6



CM 2

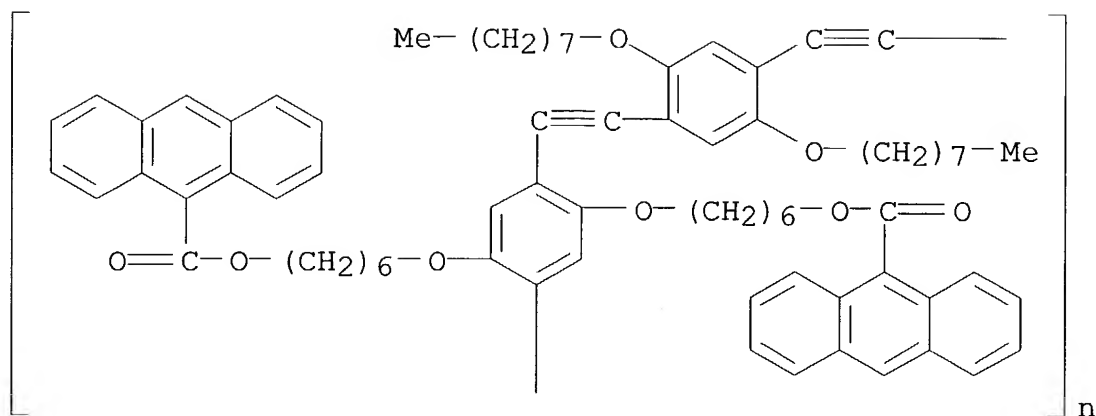
CRN 153033-27-3

CMF C26 H38 O2



RN 238421-20-0 HCA

CN Poly[[2,5-bis[[6-[(9-anthracenylcarbonyl)oxy]hexyl]oxy]-1,4-phenylene]-1,2-ethynediyl[2,5-bis(octyloxy)-1,4-phenylene]-1,2-ethynediyl] (9CI) (CA INDEX NAME)



IT 238421-16-4P 238421-19-7P

(COU-OPPE; prepn. of sensitizer-contg. monomers and poly(phenyl-acetylene) **photoluminescent** conjugated polymers with enhanced polarizing energy transfer)

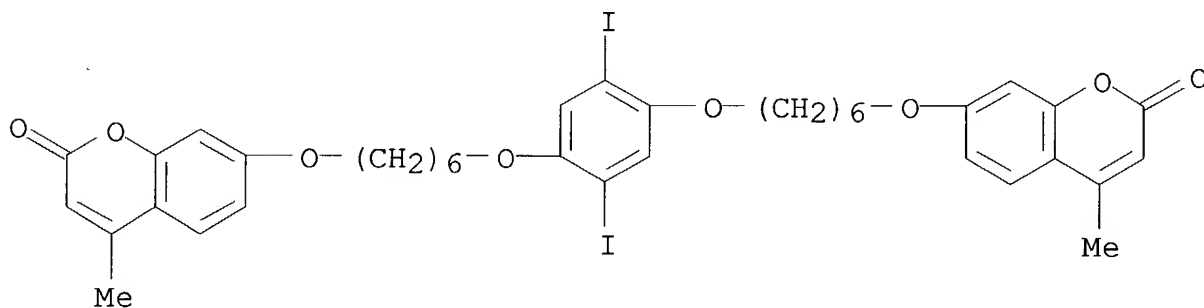
RN 238421-16-4 HCA

CN 2H-1-Benzopyran-2-one, 7,7'-[(2,5-diiodo-1,4-phenylene)bis(oxy-6,1-hexanediyl-oxy)]bis[4-methyl-, polymer with 1,4-diethynyl-2,5-bis(octyloxy)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 238421-15-3

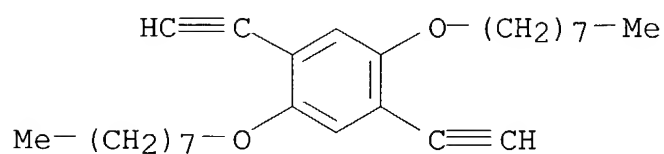
CMF C38 H40 I2 O8



CM 2

CRN 153033-27-3

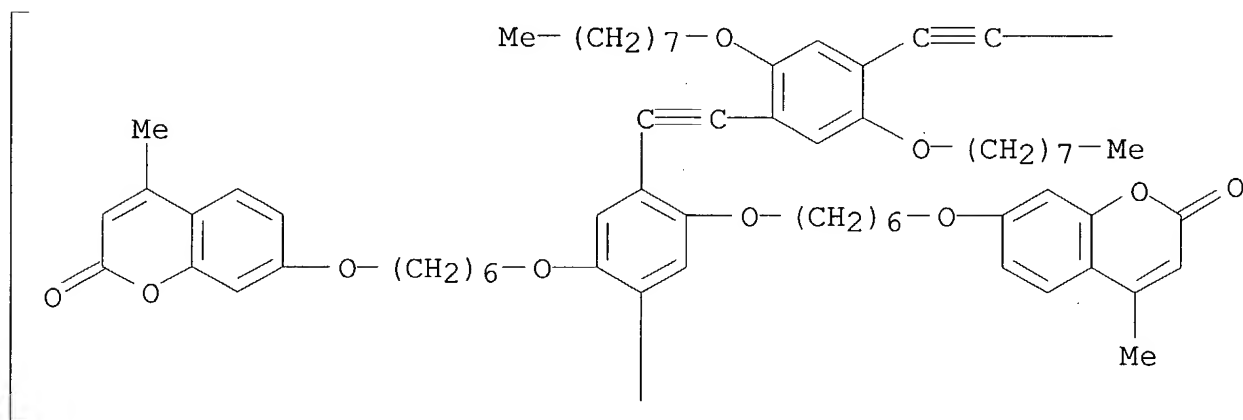
CMF C26 H38 O2



RN 238421-19-7 HCA

CN Poly[[2,5-bis[[6-[(4-methyl-2-oxo-2H-1-benzopyran-7-yl)oxy]hexyl]oxy]-1,4-phenylene]-1,2-ethynediyl[2,5-bis(octyloxy)-1,4-phenylene]-1,2-ethynediyl] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

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IT 173428-83-6P 174592-87-1P

(EHO-OPPE; prepn. of sensitizer-contg. monomers and poly(phenyl-acetylene) **photoluminescent** conjugated polymers with enhanced polarizing energy transfer)

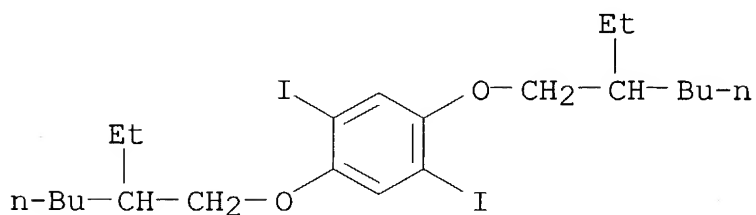
RN 173428-83-6 HCA

CN Benzene, 1,4-bis[(2-ethylhexyl)oxy]-2,5-diiodo-, polymer with 1,4-diethynyl-2,5-bis(octyloxy)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 173428-79-0

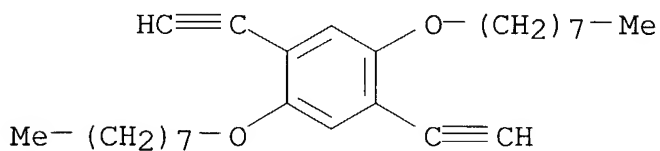
CMF C22 H36 I2 O2



CM 2

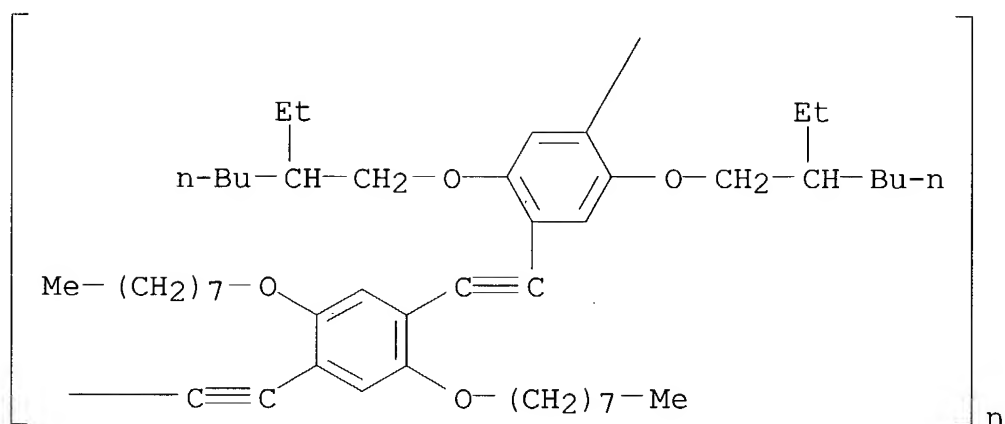
CRN 153033-27-3

CMF C26 H38 O2



RN 174592-87-1 HCA

CN Poly[[2,5-bis[(2-ethylhexyl)oxy]-1,4-phenylene]-1,2-ethynediyl[2,5-bis(octyloxy)-1,4-phenylene]-1,2-ethynediyl] (9CI) (CA INDEX NAME)



- CC 35-7 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 36, 74
- ST polyphenylene ethynylene coumarin sensitizer prepn
photoluminescence; anthracene photosensitizer polyphenylene
ethynylene polarizing energy transfer; polyacetylene polyphenylene
conjugated polymer covalent photosensitizer
- IT Polymerization
(Heck cross-coupling; prepn. of sensitizer-contg. monomers and
poly(phenyl-acetylene) **photoluminescent** conjugated
polymers with enhanced polarizing energy transfer)
- IT Cross-coupling reaction
(Heck; prepn. of sensitizer-contg. monomers and
poly(phenyl-acetylene) **photoluminescent** conjugated
polymers with enhanced polarizing energy transfer)
- IT Polymers, preparation
(conjugated; prepn. of sensitizer-contg. monomers and
poly(phenyl-acetylene) **photoluminescent** conjugated
polymers with enhanced polarizing energy transfer)
- IT Polarized light
(isotropic; prepn. of sensitizer-contg. monomers and
poly(phenyl-acetylene) **photoluminescent** conjugated
polymers with enhanced polarizing energy transfer)
- IT Polymer chains
(orientation; prepn. of sensitizer-contg. monomers and
poly(phenyl-acetylene) **photoluminescent** conjugated
polymers with enhanced polarizing energy transfer)
- IT Photochemistry
(photosensitizers; prepn. of sensitizer-contg. monomers and
poly(phenyl-acetylene) **photoluminescent** conjugated
polymers with enhanced polarizing energy transfer)
- IT Polyphenyls
Polyphenyls

- (polyacetylene-, coumarin and anthracene contg.; prepn. of sensitizer-contg. monomers and poly(phenyl-acetylene) **photoluminescent** conjugated polymers with enhanced polarizing energy transfer)
- IT Polyacetylenes, preparation
Polyacetylenes, preparation
(polyphenyl-, coumarin and anthracene contg.; prepn. of sensitizer-contg. monomers and poly(phenyl-acetylene) **photoluminescent** conjugated polymers with enhanced polarizing energy transfer)
- IT Alkylation
Luminescence
Optical absorption
Photoinduced energy transfer
Resonance energy
(prepn. of sensitizer-contg. monomers and poly(phenyl-acetylene) **photoluminescent** conjugated polymers with enhanced polarizing energy transfer)
- IT Polymer blends
(prepn. of sensitizer-contg. monomers and poly(phenyl-acetylene) **photoluminescent** conjugated polymers with enhanced polarizing energy transfer)
- IT 238421-18-6P 238421-20-0P
(ANT-OPPE; prepn. of sensitizer-contg. monomers and poly(phenyl-acetylene) **photoluminescent** conjugated polymers with enhanced polarizing energy transfer)
- IT 238421-16-4P 238421-19-7P
(COU-OPPE; prepn. of sensitizer-contg. monomers and poly(phenyl-acetylene) **photoluminescent** conjugated polymers with enhanced polarizing energy transfer)
- IT 173428-83-6P 174592-87-1P
(EHO-OPPE; prepn. of sensitizer-contg. monomers and poly(phenyl-acetylene) **photoluminescent** conjugated polymers with enhanced polarizing energy transfer)
- IT 85389-89-5P
(MOC; prepn. of sensitizer-contg. monomers and poly(phenyl-acetylene) **photoluminescent** conjugated polymers with enhanced polarizing energy transfer)
- IT 71942-30-8P, Propyl 9-Anthracenecarboxylate
(PAC; prepn. of sensitizer-contg. monomers and poly(phenyl-acetylene) **photoluminescent** conjugated polymers with enhanced polarizing energy transfer)
- IT 14221-01-3, Tetrakis(triphenylphosphine)palladium
(coupling catalyst; prepn. of sensitizer-contg. monomers and poly(phenyl-acetylene) **photoluminescent** conjugated polymers with enhanced polarizing energy transfer)
- IT 9002-88-4, Polyethylene
(host, polyacetylene-polyphenyl blends; prepn. of

- sensitizer-contg. monomers and poly(phenyl-acetylene) **photoluminescent** conjugated polymers with enhanced polarizing energy transfer)
- IT 238421-15-3P 238421-17-5P
(intermediate and monomer; prepn. of sensitizer-contg. monomers and poly(phenyl-acetylene) **photoluminescent** conjugated polymers with enhanced polarizing energy transfer)
- IT 238421-14-2P
(intermediate; prepn. of sensitizer-contg. monomers and poly(phenyl-acetylene) **photoluminescent** conjugated polymers with enhanced polarizing energy transfer)
- IT 90-33-5, 7-Hydroxy-4-methylcoumarin 110-54-3, Hexane, reactions 111-87-5, 1-Octanol, reactions 591-50-4, Iodobenzene 723-62-6, 9-Anthracenecarboxylic acid 1972-28-7, Diethylazodicarboxylate 4286-55-9 13064-64-7, 1,4-Dihydroxy-2,5-diiodobenzene 153033-27-3, 1,4-Bis(ethynyl)-2,5-di(octyloxy)benzene
(prepn. of sensitizer-contg. monomers and poly(phenyl-acetylene) **photoluminescent** conjugated polymers with enhanced polarizing energy transfer)

L65 ANSWER 6 OF 13 HCA COPYRIGHT 2004 ACS on STN

129:246016 A Processible Poly(phenyleneethynylene) with Strong **Photoluminescence**: Synthesis and Characterization of Poly[(m-phenyleneethynylene)-alt-(p-phenyleneethynylene)]. Pang, Yi; Li, Juan; Hu, Bin; Karasz, Frank E. (Department of Chemistry Center for High Performance Polymers and Composites, Clark Atlanta University, Atlanta, GA, 30314, USA). *Macromolecules*, 31(19), 6730-6732 (English) 1998. CODEN: MAMOBX. ISSN: 0024-9297. Publisher: American Chemical Society.

AB The prepn. and characterization of 2,5-bis(hexyloxy)-1,4-diiodobenzene-1,3-diethynylbenzene copolymer is described with respect to development of polyphenyleneacetylenes with improved processability and good **luminescent** properties. The obsd. monomodal mol. wt. distribution suggested that cyclic products were not formed during the polymn. Incorporation of the m-phenylene unit enabled the chain to effectively adopt a coil-like conformation in soln. Preliminary results indicated that **electroluminescence** could be obtained in a single layer device of the prepd. polymer, although the **EL** spectrum is slightly red-shifted with respect to the **photoluminescence** spectrum, indicating perhaps the presence of a second electro-optically active species.

IT 213262-77-2P 213262-79-4P
(prepn. and **luminescence** of m-phenylene unit-contg. polyphenyleneacetylenes)

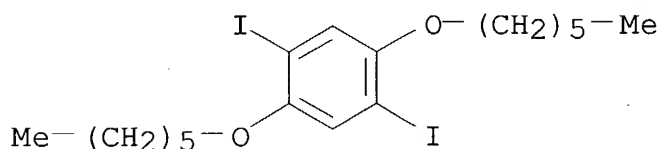
RN 213262-77-2 HCA

CN Benzene, 1,4-bis(hexyloxy)-2,5-diiodo-, polymer with 1,3-diethynylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 153033-31-9

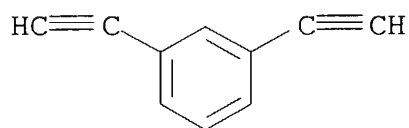
CMF C18 H28 I2 O2



CM 2

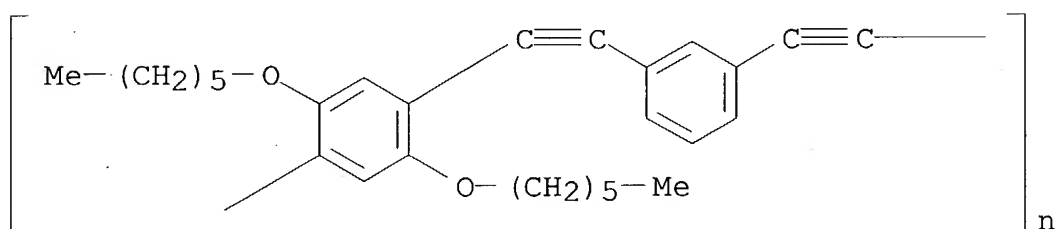
CRN 1785-61-1

CMF C10 H6



RN 213262-79-4 HCA

CN Poly[[2,5-bis(hexyloxy)-1,4-phenylene]-1,2-ethynediyl-1,3-phenylene-1,2-ethynediyl] (9CI) (CA INDEX NAME)



CC 37-5 (Plastics Manufacture and Processing)

Section cross-reference(s): 38, 73

ST processible polyphenyleneethynylene prepn characterization;
electroluminescence polyphenyleneacetylene; chain
 conformation polyphenyleneacetylene; **luminescence**
 polyphenyleneacetylene chain structure

IT Polymer chains

(conformation; prepn. and **luminescence** of m-phenylene
 unit-contg. polyphenyleneacetylenes)

IT Polyacetylenes, preparation

(polyphenylene-; prepn. and **luminescence** of m-phenylene unit-contg. polyphenyleneacetylenes)

IT **Luminescence**

Luminescence, electroluminescence

(prepn. and **luminescence** of m-phenylene unit-contg. polyphenyleneacetylenes)

IT **213262-77-2P 213262-79-4P**

(prepn. and **luminescence** of m-phenylene unit-contg. polyphenyleneacetylenes)

L65 ANSWER 7 OF 13 HCA COPYRIGHT 2004 ACS on STN

128:230937 Synthesis and photophysics of silylene-tethered divinylarene copolymers. Chen, Ruey-Min; Deng, Z. B.; Sun, G.; Lee, Shuit-Tong; Luh, Tien-Yau (Department of Chemistry National Taiwan University, Taipei, 106, Taiwan). Polymer Preprints (American Chemical Society, Division of Polymer Chemistry), 39(1), 89 (English) **1998**.

CODEN: ACPPAY. ISSN: 0032-3934. Publisher: American Chemical Society, Division of Polymer Chemistry.

AB Hydrosilylation of bis-arylnes with bis(vinylsilylhydrides) yields silylene-tethered divinylarene polymers contg. aryl or aryl-thiophene groups in the main chain. Polymers with aryl groups in the main chain exhibit dual fluorescence spectra and the intensity in the blue light region increases with mol. wt. Intramol. interaction between **luminophores** in the polymers, both at the ground and at the excited states might occur. The polymers exhibited an **electroluminescence** band at 460 nm.

IT **204577-88-8P 204577-89-9P**

(synthesis and fluorescence and **electroluminescence** of silylene-tethered divinylarene and arene-thiophene copolymers)

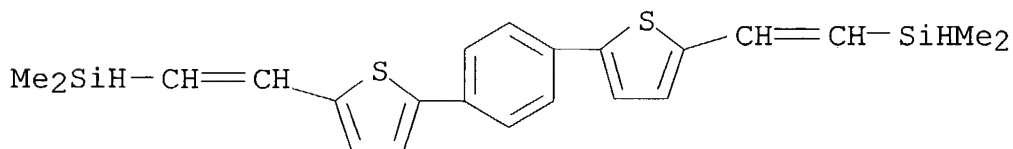
RN 204577-88-8 HCA

CN Silane, [1,4-phenylenebis(5,2-thiophenediyl-2,1-ethenediyl)]bis(dimethyl-, polymer with 1,4-diethynyl-2,5-bis(octyloxy)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 204577-85-5

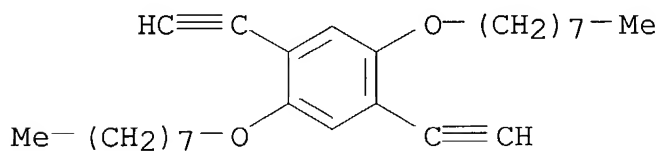
CMF C22 H26 S2 Si2



CM 2

CRN 153033-27-3

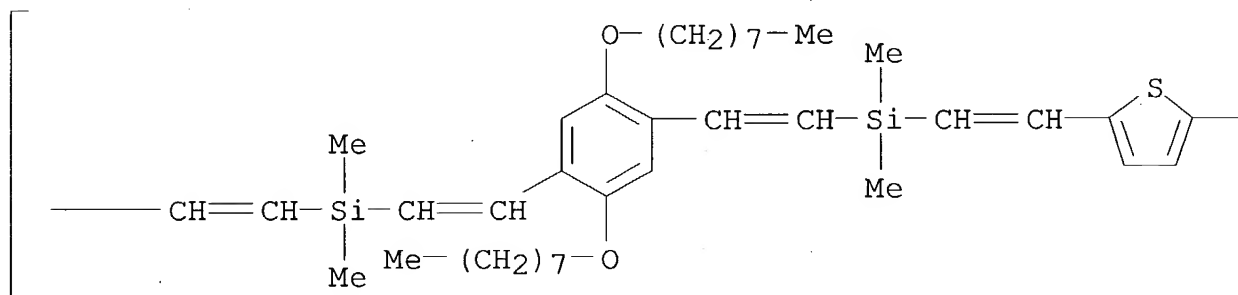
CMF C26 H38 O2



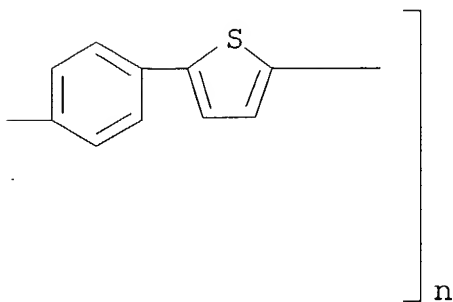
RN 204577-89-9 HCA

CN Poly[2,5-thiophenediyl-1,4-phenylene-2,5-thiophenediyl-1,2-ethenediyl(dimethylsilylene)-1,2-ethenediyl[2,5-bis(octyloxy)-1,4-phenylene]-1,2-ethenediyl(dimethylsilylene)-1,2-ethenediyl] (9CI)
(CA INDEX NAME)

PAGE 1-A



PAGE 1-B



CC 36-5 (Physical Properties of Synthetic High Polymers)
Section cross-reference(s): 35, 74

- ST silylene tethered divinylarene polymer prepn
electroluminescence; fluorescence dual divinylarene silylene conjugated polymer
- IT Polymers, properties
(conjugated; synthesis and fluorescence and **electroluminescence** of silylene-tethered divinylarene and arene-thiophene copolymers)
- IT Fluorescence
(dual; synthesis and fluorescence and **electroluminescence** of silylene-tethered divinylarene and arene-thiophene copolymers)
- IT Polymerization
(hydrosilylation; synthesis and fluorescence and **electroluminescence** of silylene-tethered divinylarene and arene-thiophene copolymers)
- IT Polysilanes
Polysilanes
(polyacetylene-; synthesis and fluorescence and **electroluminescence** of silylene-tethered divinylarene and arene-thiophene copolymers)
- IT Polyacetylenes, properties
Polyacetylenes, properties
(polysilane-; synthesis and fluorescence and **electroluminescence** of silylene-tethered divinylarene and arene-thiophene copolymers)
- IT Polymers, properties
(polythiophenes, polyacetylene-polysilane; synthesis and fluorescence and **electroluminescence** of silylene-tethered divinylarene and arene-thiophene copolymers)
- IT Excited electronic state
Hydrosilylation
Luminescence, electroluminescence
(synthesis and fluorescence and **electroluminescence** of silylene-tethered divinylarene and arene-thiophene copolymers)
- IT 197500-43-9P 197500-44-0P 204577-86-6P 204577-87-7P
204577-88-8P 204577-89-9P 204577-91-3P
204577-92-4P
(synthesis and fluorescence and **electroluminescence** of silylene-tethered divinylarene and arene-thiophene copolymers)

L65 ANSWER 8 OF 13 HCA COPYRIGHT 2004 ACS on STN

126:294125 **Electroluminescence** in conducting polymers based on poly(phenylene ethynylene). Hirohata, M.; Tada, K.; Kawai, T.; Onoda, M.; Yoshino, K. (Faculty of Engineering, Osaka University, Yamada-Oka, Suita, Osaka, Japan). Synthetic Metals, 85(1-3), 1273-1274 (English) 1997. CODEN: SYMEDZ. ISSN: 0379-6779. Publisher: Elsevier.

AB **Electroluminescence (EL)** in various conducting polymers (CP) based on poly(phenylene ethynylene) (ROPPE) which have

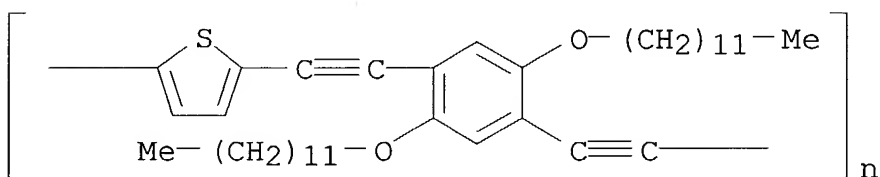
C-C triple bond in their main chains was studied. **EL** in Al/CP/ITO structure utilizing copolymer based on ROPPE and pyridine as CP was blue-green and stronger than that in same structure utilizing well-known poly(dialkoxy-p-phenylene vinylene) (ROPPV). However, weaker red **EL** was obsd. in same structure utilizing copolymer based on ROPPE and anthracene. This result suggests that the increased band gap energy and improved exciton confinement efficiency, due to shortened conjugate length, were realized by introduction of C-C triple bonds in main chain of conducting polymers such as ROPPV, while these effects of C-C triple bonds are suppressed by introduction of electron-rich moiety such as anthracene which should increase effective conjugation length. Electrochem. studies on these copolymers also confirmed this interpretation.

IT 152270-15-0 152270-17-2

(electroluminescence in)

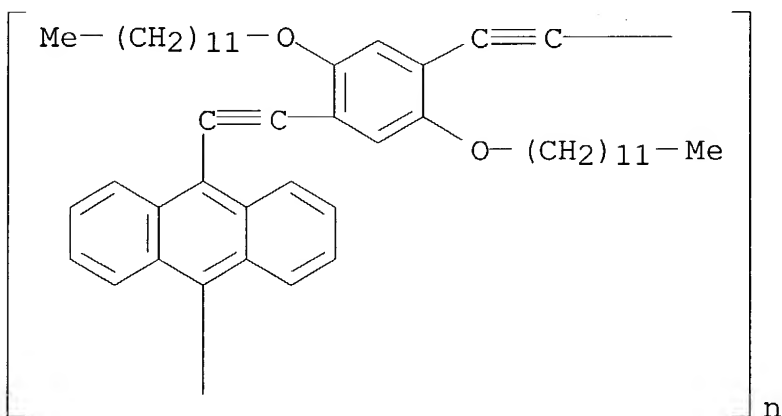
RN 152270-15-0 HCA

CN Poly[2,5-thiophenediyl-1,2-ethynediyl[2,5-bis(dodecyloxy)-1,4-phenylene]-1,2-ethynediyl] (9CI) (CA INDEX NAME)



RN 152270-17-2 HCA

CN Poly[9,10-anthracenediyl-1,2-ethynediyl[2,5-bis(dodecyloxy)-1,4-phenylene]-1,2-ethynediyl] (9CI) (CA INDEX NAME)



CC 37-5 (Plastics Manufacture and Processing)

Section cross-reference(s): 73

ST blue green **electroluminescence** polyphenyleneethynylene;

- aluminum ITO polyphenyleneethynylene LED; band gap
polyphenyleneethynylene; **photoluminescence**
polyphenyleneethynylene
- IT **Electroluminescent** devices
(LED fabrication from ITO and aluminum and
poly(phenyleneethynylenes))
- IT **Luminescence, electroluminescence**
(blue-green; in poly(phenyleneethynylenes))
- IT Polyacetylenes, properties
(**electroluminescence** in poly(phenyleneethynylenes))
- IT **Luminescence**
(in poly(phenyleneethynylenes))
- IT 7429-90-5, Aluminum, uses 50926-11-9, ITO
(LED fabrication from ITO and aluminum and
poly(phenyleneethynylenes))
- IT 152270-15-0 152270-17-2 175449-51-1
181144-58-1
(**electroluminescence** in)

L65 ANSWER 9 OF 13 HCA COPYRIGHT 2004 ACS on STN

125:34614 Efficient Solid-State **Photoluminescence** in New

Poly(2,5-dialkoxy-p-phenyleneethynylene)s. Weder, Christoph;
Wrighton, Mark S. (Department of Chemistry, Massachusetts Institute
of Technology, Cambridge, MA, 02139, USA). *Macromolecules*, 29(15),
5157-5165 (English) 1996. CODEN: MAMOBX. ISSN:
0024-9297. Publisher: American Chemical Society.

AB A series of novel poly(2,5-dialkoxy-p-phenyleneethynylene)s (PPEs)
has been prepd. by the palladium-catalyzed cross-coupling
polycondensation of aryl acetylenes and aryl iodides. Different
alkoxy side chains including n-hexadecyloxy, n-octyloxy,
(2-ethylhexyl)oxy, (2-methylpropyl)oxy, (3-
(dimethylamino)propyl)oxy, and (7-carboxyheptyl)oxy groups were
attached to the rigid-rod polymer main chain. With this structural
concept, polymers having an identical conjugated backbone but
different supramol. structures in the solid state could be achieved.
X-ray diffraction measurements on thin films show that the polymers
which have sterically hindered side chains are essentially
disordered, while those with only linear side chains can form
lamellar structures with significant degrees of long-range order.
High **photoluminescence** (PL) quantum yields, up to 0.86 in
soln. and 0.36 in the solid state, have been measured for the new
materials. While the soln. quantum yields are independent of the
functionalization, solid-state quantum efficiencies were found to be
related to the degree of long-range order in the samples, decreasing
with increasing order. The coplanar orientation of the conjugated
polymer backbones is assumed to lead to the formation of excimer
complexes which provide nonemissive decay channels for the excited
states. These nonemissive orientations are more significant in the

materials having a greater degree of long-range order.

IT 173428-82-5P 173428-83-6P 173428-85-8P

173428-88-1P 174592-84-8P 174592-86-0P

174592-87-1P 174592-89-3P

(solid-state photoluminescence in poly(2,5-dialkoxy-p-phenyleneethynylenes))

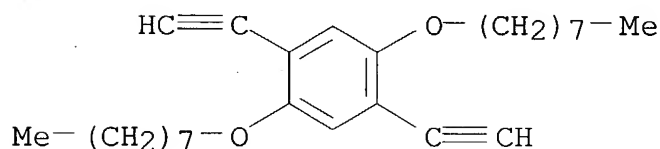
RN 173428-82-5 HCA

CN Benzene, 1,4-bis(hexadecyloxy)-2,5-diiodo-, polymer with
1,4-diethynyl-2,5-bis(octyloxy)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 153033-27-3

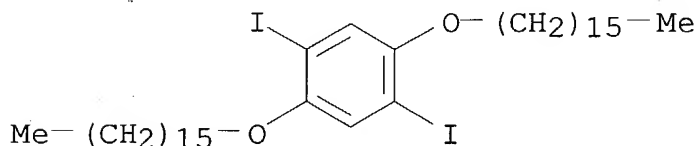
CMF C26 H38 O2



CM 2

CRN 145483-64-3

CMF C38 H68 I2 O2



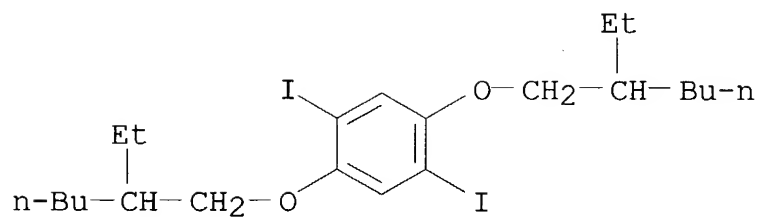
RN 173428-83-6 HCA

CN Benzene, 1,4-bis[(2-ethylhexyl)oxy]-2,5-diiodo-, polymer with
1,4-diethynyl-2,5-bis(octyloxy)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 173428-79-0

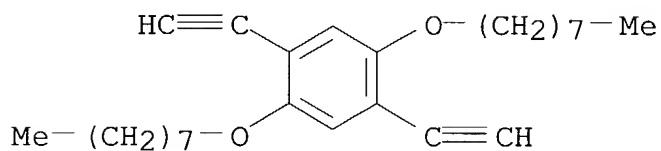
CMF C22 H36 I2 O2



CM 2

CRN 153033-27-3

CMF C26 H38 O2



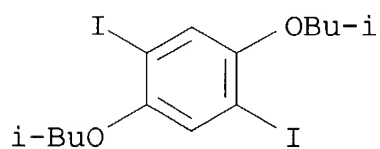
RN 173428-85-8 HCA

CN Benzene, 1,4-diethynyl-2,5-bis(octyloxy)-, polymer with
1,4-diiodo-2,5-bis(2-methylpropoxy)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 173428-84-7

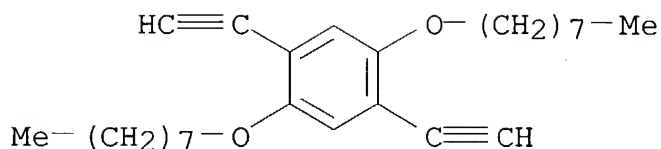
CMF C14 H20 I2 O2



CM 2

CRN 153033-27-3

CMF C26 H38 O2



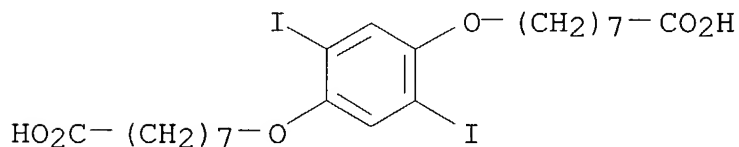
RN 173428-88-1 HCA

CN Octanoic acid, 8,8'-[(2,5-diiodo-1,4-phenylene)bis(oxy)]bis-, polymer with 1,4-diethynyl-2,5-bis(octyloxy)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 173428-87-0

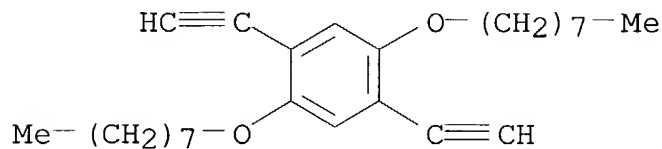
CMF C22 H32 I2 O6



CM 2

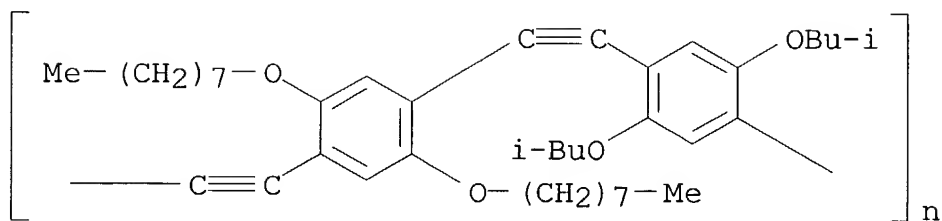
CRN 153033-27-3

CMF C26 H38 O2



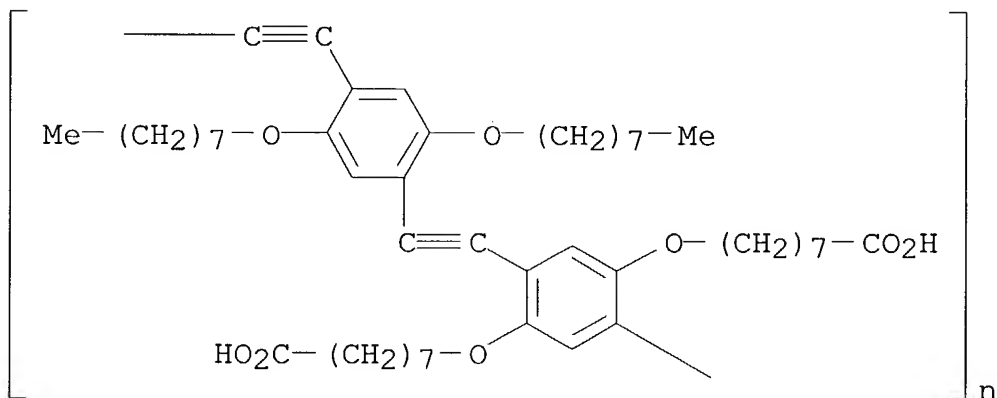
RN 174592-84-8 HCA

CN Poly[[2,5-bis(2-methylpropoxy)-1,4-phenylene]-1,2-ethynediyl[2,5-bis(octyloxy)-1,4-phenylene]-1,2-ethynediyl] (9CI) (CA INDEX NAME)



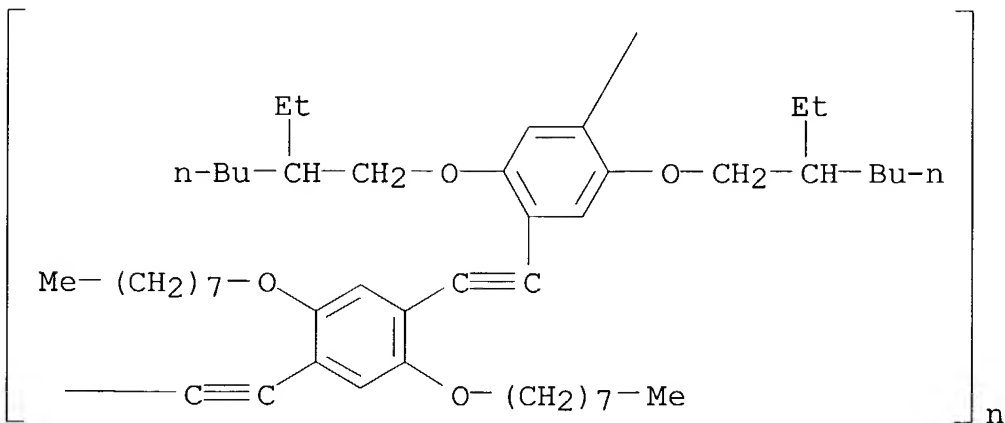
RN 174592-86-0 HCA

CN Poly[[2,5-bis[(7-carboxyheptyl)oxy]-1,4-phenylene]-1,2-ethynediyl[2,5-bis(octyloxy)-1,4-phenylene]-1,2-ethynediyl] (9CI)
(CA INDEX NAME)



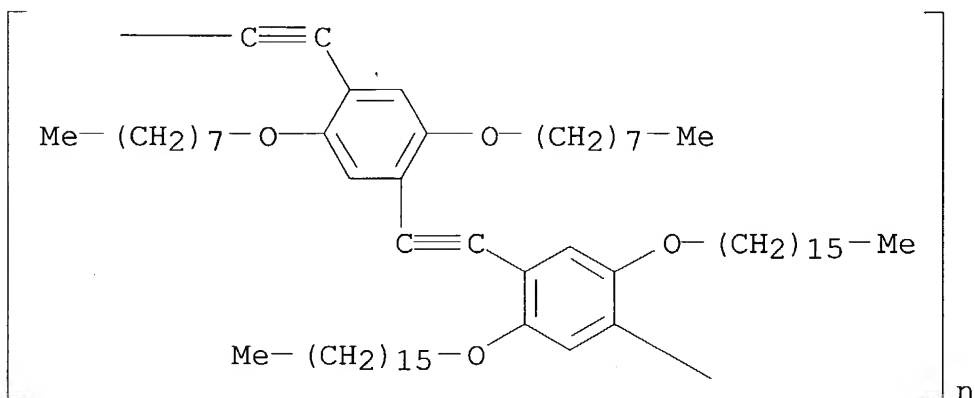
RN 174592-87-1 HCA

CN Poly[[2,5-bis[(2-ethylhexyl)oxy]-1,4-phenylene]-1,2-ethynediyl[2,5-bis(octyloxy)-1,4-phenylene]-1,2-ethynediyl] (9CI) (CA INDEX NAME)



RN 174592-89-3 HCA

CN Poly[[2,5-bis(hexadecyloxy)-1,4-phenylene]-1,2-ethynediyl[2,5-bis(octyloxy)-1,4-phenylene]-1,2-ethynediyl] (9CI) (CA INDEX NAME)



CC 36-5 (Physical Properties of Synthetic High Polymers)

Section cross-reference(s): 35, 73, 76

ST polyphenyleneacetylene alkoxy prepn photo luminescence;

polydiacetylene polyphenylene photo luminescence

IT Fluorescence

(solid-state photoluminescence in poly(2,5-dialkoxy-p-phenyleneethynylenes))

IT Phosphors

(electroluminescent, solid-state photoluminescence in poly(2,5-dialkoxy-p-phenyleneethynylenes))

IT Polyacetylenes, properties

(polydiacetylenes, phenylene group-contg., solid-state photoluminescence in poly(2,5-dialkoxy-p-phenyleneethynylenes))

IT 1066-54-2, (Trimethylsilyl)acetylene 18908-66-2, 2-Ethylhexyl bromide

(monomer synthesis; solid-state photoluminescence in poly(2,5-dialkoxy-p-phenyleneethynylenes))

IT 51560-21-5P 67399-94-4P, 1,4-Bis(octyloxy)benzene 85417-75-0P

110126-93-7P, 1,4-Bis((2-ethylhexyl)oxy)benzene 137436-24-9P,

1,4-Bis(hexadecyloxy)benzene 145483-68-7P, 1,4-Bis(octyloxy)-2,5-diiodobenzene 173428-81-4P

(monomer synthesis; solid-state photoluminescence in poly(2,5-dialkoxy-p-phenyleneethynylenes))

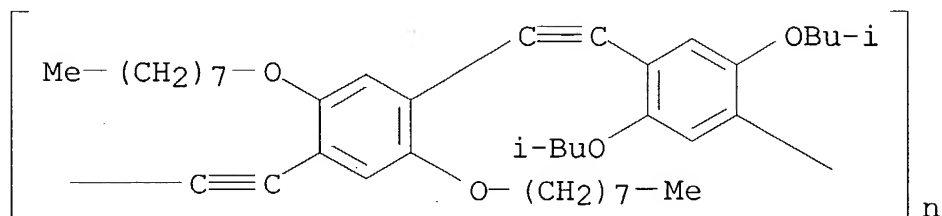
IT 145483-64-3P, 1,4-Bis(hexadecyloxy)-2,5-diiodobenzene 153033-27-3P

173428-79-0P, 1,4-Bis((2-ethylhexyl)oxy)-2,5-diiodobenzene

173428-80-3P, 1,4-Bis((3-(dimethylamino)propyl)oxy)-2,5-diiodobenzene

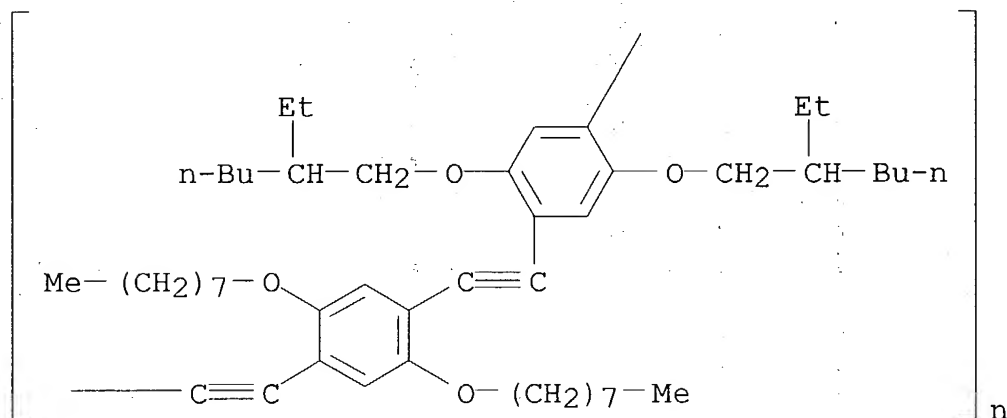
(monomer; solid-state photoluminescence in

- poly(2,5-dialkoxy-p-phenyleneethynylenes))
- IT 153033-25-1P 153033-33-1P **173428-82-5P**
173428-83-6P 173428-85-8P 173428-86-9P
173428-88-1P 174592-84-8P 174592-85-9P
174592-86-0P 174592-87-1P 174592-89-3P
(solid-state **photoluminescence** in poly(2,5-dialkoxy-p-phenyleneethynylenes))
- L65 ANSWER 10 OF 13 HCA COPYRIGHT 2004 ACS on STN
- 125:11915 Solid state structure and **photoluminescence** properties of poly(2,5-dialkoxy-p-phenyleneethynylene)s. Weder, Christoph; Wagner, Michael J.; Wrighton, Mark S. (Department Chemistry, Massachusetts Institute Technology, Cambridge, MA, 02139, USA). Materials Research Society Symposium Proceedings, 413(Electrical, Optical, and Magnetic Properties of Organic Solid State Materials III), 77-84 (English) **1996**. CODEN: MRSPDH. ISSN: 0272-9172. Publisher: Materials Research Society.
- AB In an effort to better understand the relationship between mol. structure and photophys. properties, a series of novel poly(2,5-dialkoxy-p-phenyleneethynylene)s was prep'd. and investigated. Wide angle x-ray diffraction measurements show that the supramol. structure can be easily and significantly influenced by the nature of substituents covalently linked to the rigid-rod polymer main chains. Polymers which have sterically hindered side chains are essentially amorphous, while those with only linear side chains can form lamellar structures with a significant degree of long-range order. High **photoluminescence** quantum yields, up to 0.86 in soln. and 0.36 in the solid state, have been measured. While the soln. quantum yields are independent of the functionalization, solid state quantum efficiencies were related to the degree of long-range order in the samples. In samples with a high degree of long-range order, the close proximity of the coplanar oriented polymer backbones is assumed to lead to the formation of excimer complexes which provide nonemissive decay channels and, hence, result in comparable low **photoluminescence** quantum yields. In samples that adopt only a small extent of long-range order, the rigid-rod conjugated polymer backbones behave as if they were dissolved in a hydrocarbon solvent and consequently high quantum efficiencies are obtained. Preliminary results indicate the suitability of these polymers as the emitting layer in **electroluminescent** devices.
- IT **174592-84-8 174592-87-1 174592-89-3**
(solid-state structure and **photoluminescence** properties of poly(2,5-dialkoxy-p-phenyleneethynylene)s)
- RN 174592-84-8 HCA
- CN Poly[[2,5-bis(2-methylpropoxy)-1,4-phenylene]-1,2-ethynediyl[2,5-bis(octyloxy)-1,4-phenylene]-1,2-ethynediyl] (9CI) (CA INDEX NAME)



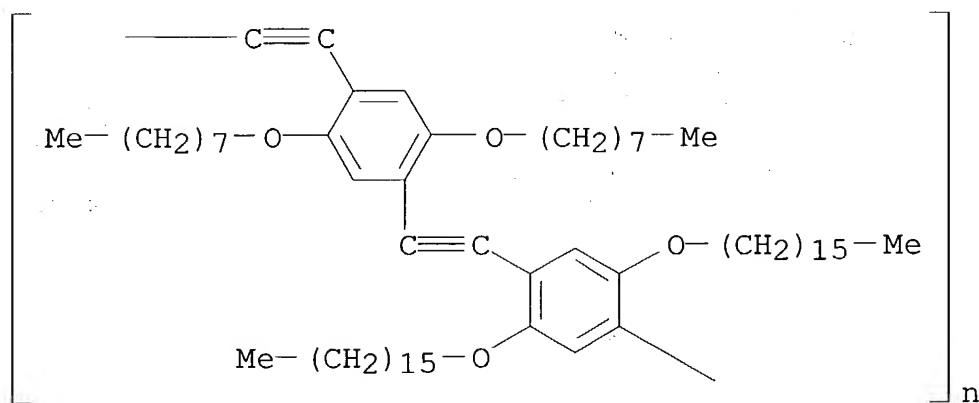
RN 174592-87-1 HCA

CN Poly[[2,5-bis[(2-ethylhexyl)oxy]-1,4-phenylene]-1,2-ethynediyl[2,5-bis(octyloxy)-1,4-phenylene]-1,2-ethynediyl] (9CI) (CA INDEX NAME)



RN 174592-89-3 HCA

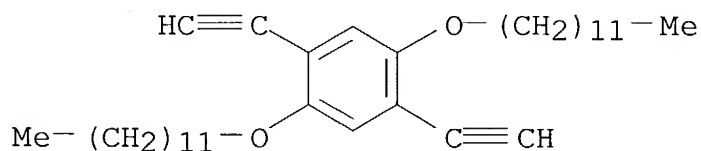
CN Poly[[2,5-bis(hexadecyloxy)-1,4-phenylene]-1,2-ethynediyl[2,5-bis(octyloxy)-1,4-phenylene]-1,2-ethynediyl] (9CI) (CA INDEX NAME)



CC 36-2 (Physical Properties of Synthetic High Polymers)

ST solid state structure polydialkoxyphenyleneethynylene;

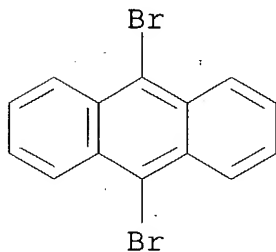
- photoluminescence** polydialkoxyphenyleneethynylene
IT Chains, chemical
 Luminescence
 (solid-state structure and **photoluminescence** properties
 of poly(2,5-dialkoxy-p-phenyleneethynylene)s)
IT Polyacetylenes, properties
 (solid-state structure and **photoluminescence** properties
 of poly(2,5-dialkoxy-p-phenyleneethynylene)s)
IT 153033-25-1 **174592-84-8** 174592-85-9 **174592-87-1**
 174592-89-3
 (solid-state structure and **photoluminescence** properties
 of poly(2,5-dialkoxy-p-phenyleneethynylene)s)
- L65 ANSWER 11 OF 13 HCA COPYRIGHT 2004 ACS on STN
124:262143 Blue-green **electroluminescence** in copolymer based
on poly(1,4-phenylene ethynylene). Tada, Kazuya; Onoda, Mitsuyoshi;
Hirohata, Masaharu; Kawai, Tsuyoshi; Yoshino, Katsumi (Fac. Eng.,
Osaka Univ., Osaka, 565, Japan). Japanese Journal of Applied
Physics, Part 2: Letters, 35(2B), L251-L253 (English) **1996**
. CODEN: JAPLD8. ISSN: 0021-4922. Publisher: Japanese Journal of
Applied Physics.
- AB Optical characteristics of poly(2,5-dialkoxy-1,4-phenylene
diethynylene-co-2,5-pyridinylene) (ROPPE-Py) were investigated.
Intense blue-green **electroluminescence** (EL)
emission was obsd. in **light emitting diode** (LED)
with Al/ROPPE-Py/indium-tin-oxide (ITO) structure. This result
suggests that triple bonds in the main chain are responsible for the
blue shift and enhancement of **EL**, due to the shortening
the effective conjugation length and effective confinement of
excitons or exciton-polarons. However, the effects of triple bonds
were suppressed by the introduction of electron-rich moieties in the
main chain such as poly(2,5-dialkoxy-1,4-phenylene
diethynylene-co-9,10-anthracenylene) (ROPPE-An). Electronic energy
structures obtained from optical absorption spectra and cyclic
voltammetry measurements confirmed the effect of the electron-rich
moieties, which is due to the delocalization of π -electrons and
the enhancement of interchain interactions.
- IT **152270-04-7 152270-17-2**
 (**electroluminescence** and fluorescence in)
RN 152270-04-7 HCA
CN Anthracene, 9,10-dibromo-, polymer with 1,4-bis(dodecyloxy)-2,5-
diethynylbenzene (9CI) (CA INDEX NAME)
- CM 1
- CRN 152270-00-3
CMF C34 H54 O2



CM 2

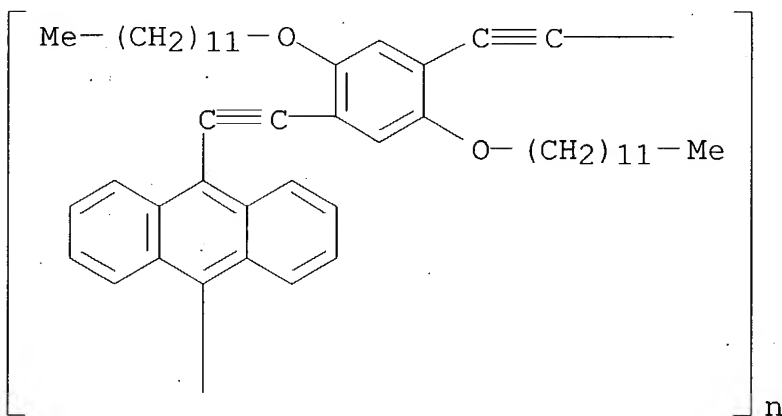
CRN 523-27-3

CMF C14 H8 Br2



RN 152270-17-2 HCA

CN Poly[9,10-anthracenediyl-1,2-ethynediyl[2,5-bis(dodecyloxy)-1,4-phenylene]-1,2-ethynediyl] (9CI) (CA INDEX NAME)



CC 36-5 (Physical Properties of Synthetic High Polymers)

Section cross-reference(s): 76

ST blue green **electroluminescence** copolymer
 polyphenyleneethynylene; pyridinylene polyphenylenediethynylene
electroluminescence; diode **light emitting**
 pyridinylene polyphenylenediethynylene

IT **Electroluminescent** devices

(blue-green **electroluminescence** in LED with aluminum-poly(didodecyloxyphenylenediethynylene-co-pyridinylene)-ITO structure)

IT Fluorescence

Luminescence, electro-

(in poly(dodecyloxyphenylenediethynylene-co-pyridinylene) and poly(didodecyloxyphenylenediethynylene-co-anthracenylenes))

IT Polyacetylenes, properties

(polydiacetylenes, **electroluminescence** and fluorescence in)

IT 174545-18-7 175449-51-1

(blue-green **electroluminescence** and fluorescence in)

IT 7429-90-5, Aluminum, properties 50926-11-9; ITO

(blue-green **electroluminescence** in LED with aluminum-poly(didodecyloxyphenylenediethynylene-co-pyridinylene)-ITO structure)

IT 152270-04-7 152270-17-2

(**electroluminescence** and fluorescence in)

L65 ANSWER 12 OF 13 HCA COPYRIGHT 2004 ACS on STN

123:325330 Photoresponse and electroresponse of polymers **light**

emitting diodes. Vardeny, Z. V.; Wei, X.; Jeglinski, S. A.

(Dep. Physics, Univ. Utah, Salt Lake City, UT, 84112, USA).

Proceedings of SPIE-The International Society for Optical Engineering, 2528 (Optical and Photonic Applications of Electroactive and Conducting Polymers), 13-22 (English) 1995. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.

AB The authors have studied the photoresponse and electroresponse of **light emitting** diodes (LEDs) made from a variety of sol. conducting polymers sandwiched between In Sn oxide (ITO) and metals including Ca, Al and Cu. Under illumination all freshly prepd. LEDs exhibit relatively large photoconductive current-voltage (I-V) responses which cross the dark I-V curve at a forward-bias voltage V30 that scales with the difference in the work functions between the ITO and metal electrodes. This causes the open-circuit voltage to easily sat. at V0 and consequently to be temp. independent, in contrast to the properties of the photovoltaic effect exhibited by conventional Schottky-barrier type photodiodes. Some LEDs, prepd. under less ideal conditions exhibit I-V curve, **electroluminescence** (EL) intensity-voltage (IEL-V) curve, and EL spectra identical in forward and reverse bias. The I-V curves were also sym. under illumination, with $I \approx 0$ at $V = 0$, suggesting a negligibly small internal elec. field. These diodes are discussed in relation to Fermi-level pinning at defect states in the interfaces between the polymer and the electrodes.

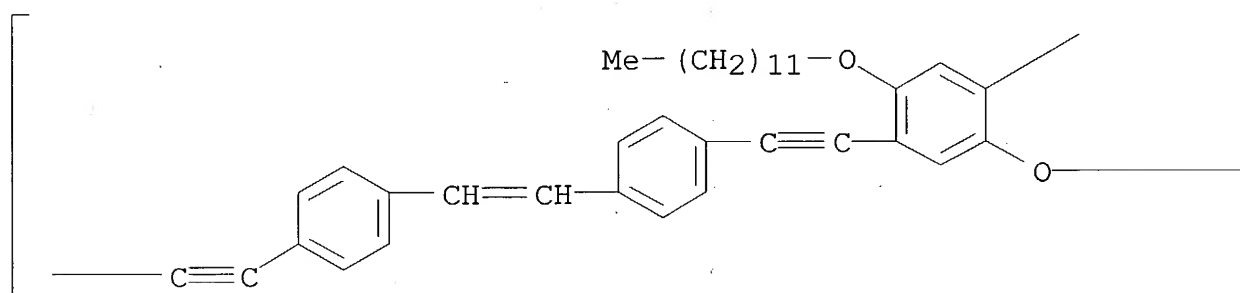
IT 152270-16-1

(photoresponse and electroresponse characteristics of polymers
light emitting diodes affected by electrode
 work function)

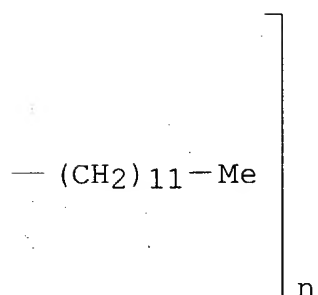
RN 152270-16-1 HCA

CN Poly[[2,5-bis(dodecyloxy)-1,4-phenylene]-1,2-ethynediyl-1,4-phenylene-1,2-ethenediyl-1,4-phenylene-1,2-ethynediyl] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST photoresponse electroresponse polymer **light emitting** diode; LED photocond photovoltage **electroluminescence**; Fermi level pinning LED

IT **Electroluminescent** devices

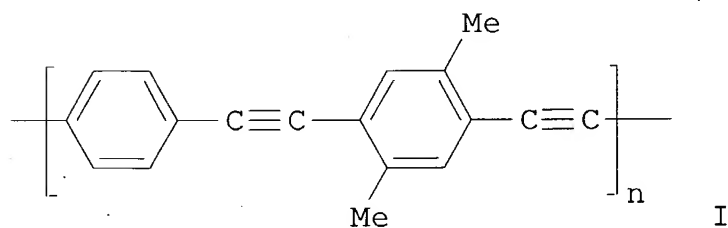
Luminescence, electro-
 Photovoltaic effect
 Work function

(photoresponse and electroresponse characteristics of polymers
light emitting diodes affected by electrode
 work function)

- IT Polymers, properties
(photoresponse and electroresponse characteristics of polymers **light emitting** diodes affected by electrode work function)
- IT Energy level, Fermi
(pinning; photoresponse and electroresponse characteristics of polymers **light emitting** diodes affected by electrode work function)
- IT Electric potential
(open-circuit, photoresponse and electroresponse characteristics of polymers **light emitting** diodes affected by electrode work function)
- IT 50926-11-9, Indium tin oxide
(photoresponse and electroresponse characteristics of polymers **light emitting** diodes affected by electrode work function)
- IT 7429-90-5, Aluminum, properties 7440-50-8, Copper, properties 7440-70-2, Calcium, properties 138184-36-8 **152270-16-1**
(photoresponse and electroresponse characteristics of polymers **light emitting** diodes affected by electrode work function)

L65 ANSWER 13 OF 13 HCA COPYRIGHT 2004 ACS on STN
122:146661 Linear phenylene-ethynylene-xylylene-ethynylene polymer, its preparation, and its-containing **light-emitting** material. Yamamoto, Ryuichi; Takagi, Masakazu (Yamamoto Ryuichi, Japan; Tatsuta Densen Kk). Jpn. Kokai Tokkyo Koho JP 06322077 A2 **19941122** Heisei, 5 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP 1993-113279 19930514.

GI



AB The polymer I is prepd. by dehydrohalogenation coupling reaction of $XArX$ with $HC.tplbond.CAr1C.tplbond.CH$ ($X = \text{halo}$; $Ar, Ar1 = 2,5\text{-xylylene-1,4-diyl}, 1,4\text{-C}_6\text{H}_4$; $Ar \neq Ar1$) in the presence of a Pd-Cu catalyst and an amine. The material consists of I. The material showed good heat resistance and chem. stability.

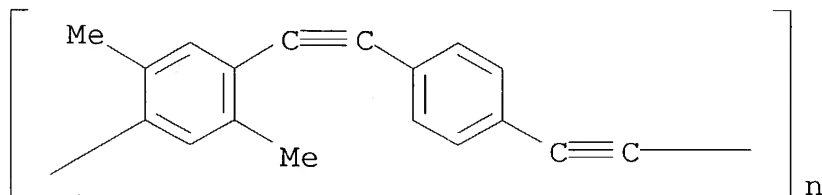
IT **122483-16-3P 160888-96-0P**

(light-emitting material contg.

phenylene-ethynylene-xylylene polymer and its prepn. by
dehydrohalogenation coupling reaction)

RN 122483-16-3 HCA

CN Poly[(2,5-dimethyl-1,4-phenylene)-1,2-ethynediyl-1,4-phenylene-1,2-ethynediyl] (9CI) (CA INDEX NAME)



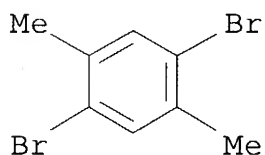
RN 160888-96-0 HCA

CN Benzene, 1,4-dibromo-2,5-dimethyl-, polymer with
1,4-diethynylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 1074-24-4

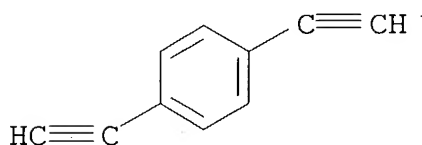
CMF C8 H8 Br2



CM 2

CRN 935-14-8

CMF C10 H6



IC ICM C08G061-00

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related
Properties)

Section cross-reference(s): 35, 38

ST phenylene ethynylene xylylene polymer **luminescence**; heat

resistance phenylene ethynylene xylylene polymer; chem stability
phenylene ethynylene xylylene polymer; dehydrohalogenation prepn
phenylene ethynylene xylylene polymer

IT Dehydrohalogenation

Heat-resistant materials

Luminescent substances

(light-emitting material contg.

phenylene-ethynylene-xylylene polymer and its prepn. by
dehydrohalogenation coupling reaction)

IT 110-89-4, Piperidine, uses 1335-23-5, Copper iodide 14221-01-3,
Tetrakis(triphenylphosphine)palladium

(dehydrohalogenation catalyst; light-emitting

material contg. phenylene-ethynylene-xylylene polymer and its
prepn. by dehydrohalogenation coupling reaction)

IT 122483-16-3P 160888-96-0P

(light-emitting material contg.

phenylene-ethynylene-xylylene polymer and its prepn. by
dehydrohalogenation coupling reaction)

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FILE 'HCA' ENTERED AT 15:08:28 ON 03 JUN 2004
SEL L79 1-31 HIT RN

FILE 'REGISTRY' ENTERED AT 15:12:07 ON 03 JUN 2004

L80 24 S E1-E24

SEL L80 7,9,14,24 RN

L81 4 S E25-E28

FILE 'HCA' ENTERED AT 15:18:12 ON 03 JUN 2004

L82 4 S L81

L83 4 S L79 AND L82

=> d 183 1-4 cbib abs hitstr hitind

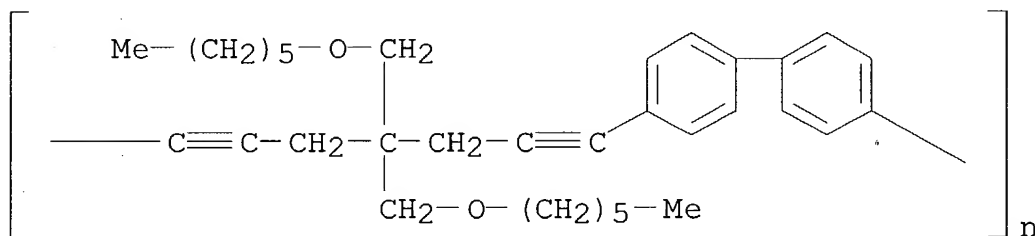
L83 ANSWER 1 OF 4 HCA COPYRIGHT 2004 ACS on STN

132:348086 Synthesis of novel conjugated polymers for potential LED
applications. Jiang, Biwang; Tilley, T. Don (Department of
Chemistry, University of California at Berkeley, Berkeley, CA,
94720, USA). Polymer Preprints (American Chemical Society, Division
of Polymer Chemistry), 41(1), 829-830 (English) 2000.
CODEN: ACPPAY. ISSN: 0032-3934. Publisher: American Chemical
Society, Division of Polymer Chemistry.

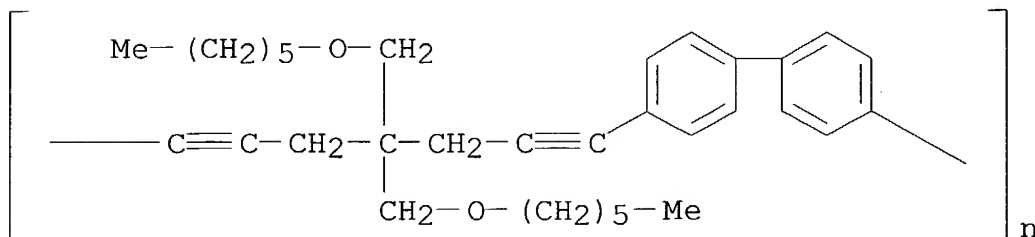
AB Zirconocene-coupling and the precursor polymer approach were used in
the synthesis of π -conjugated polymers and functional monomers
with novel structure and electronic properties, e.g. excellent

electron transport and fluorescent quantum yield. A non-conjugated diyne polymer was prep'd. via Pd-catalyzed cross-coupling polymn. of 4,4-bis(hexyloxymethyl)-1,6-heptadiyne and 4,4'-diiodobiphenyl, followed by intramol. zirconocene coupling of the diyne units to obtain a Zr complex polymer, which undergoes reactions with S₂Cl₂ and SO₂ to form conjugated polythiophenes. Thiophene-1-oxide or thiophene-1,1-dioxide copolymers show energy band gap and carrier transport properties that are superior to those of unsubstituted thiophene polymers. Highly emissive and base-dopable cyclopentadiene contg. polymers and amphiphilic conjugated polymers were also prep'd. and the optical absorption and emission spectra were obtained.

- IT **213313-79-2DP**, zirconocene coupling products, reaction products with sulfur chloride and sulfur dioxide (prepn. and optical properties of polythiophene-polyarylenedienylenes via zirconocene coupling and precursor substitution reactions)
- RN 213313-79-2 HCA
- CN Poly[[1,1'-biphenyl]-4,4'-diyl[4,4-bis[(hexyloxy)methyl]-1,6-heptadiyne-1,7-diyl]] (9CI) (CA INDEX NAME)



- IT **213313-79-2P**, 4,4-Bis(hexyloxymethyl)-1,6-heptadiyne-4,4'-diiodobiphenyl copolymer, SRU (prepn. and optical properties of polythiophene-polyarylenedienylenes via zirconocene coupling and precursor substitution reactions)
- RN 213313-79-2 HCA
- CN Poly[[1,1'-biphenyl]-4,4'-diyl[4,4-bis[(hexyloxy)methyl]-1,6-heptadiyne-1,7-diyl]] (9CI) (CA INDEX NAME)

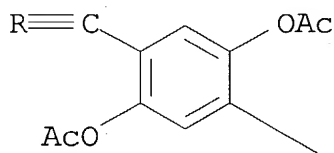
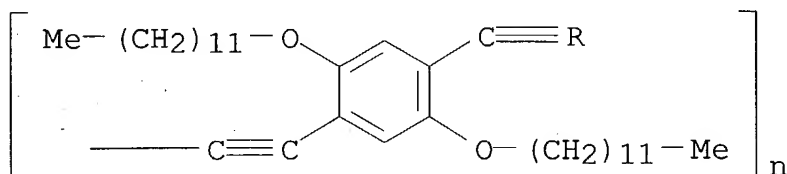


- CC 35-7 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 36, 73
- ST zirconocene coupling precursor polymer synthesis approach;
polyarylenedienylene prepn zirconocene coupling optical property;
conjugated polymer polythiophene prepn zirconocene coupling
photoluminescence
- IT 7446-09-5DP, Sulfur oxide (SO₂), reaction products with
polyarylenedienylenes, polythiophenes 10025-67-9DP, Sulfur
chloride (S₂Cl₂), reaction products with polyarylenedienylenes,
polythiophenes **213313-79-2DP**, zirconocene coupling
products, reaction products with sulfur chloride and sulfur dioxide
269396-93-2DP, zirconocene coupling products, reaction products with
sulfur chloride and sulfur dioxide
(prepn. and optical properties of polythiophene-
polyarylenedienylenes via zirconocene coupling and precursor
substitution reactions)
- IT 1291-32-3DP, Dichlorobis(η 5-cyclopentadienyl)zirconium, reaction
products with poly(arylenedienylene)s **213313-79-2P**,
4,4-Bis(hexyloxymethyl)-1,6-heptadiyne-4,4'-diiodobiphenyl
copolymer, SRU 269396-93-2P, 4,4-Bis(hexyloxymethyl)-1,6-
heptadiyne-4,4'-diiodobiphenyl copolymer
(prepn. and optical properties of polythiophene-
polyarylenedienylenes via zirconocene coupling and precursor
substitution reactions)
- L83 ANSWER 2 OF 4 HCA COPYRIGHT 2004 ACS on STN
132:93729 Preparation of π -Conjugated Polymers Composed of
Hydroquinone, p-Benzoquinone, and p-Diacetoxyphenylene Units.
Optical and Redox Properties of the Polymers. Yamamoto, Takakazu;
Kimura, Tohru; Shiraishi, Kouichi (Research Laboratory of Resources
Utilization, Tokyo Institute of Technology, Midori-ku Yokohama,
226-8503, Japan). Macromolecules, 32(26), 8886-8896 (English)
1999. CODEN: MAMOBX. ISSN: 0024-9297. Publisher: American
Chemical Society.
- AB π -Conjugated poly(hydroquinone)s and poly(p-benzoquinone)s were
prepd., and their optical properties and electrochem. redox response
were studied. The poly(hydroquinone-2,5-diyl), PPP-2,5-OH, with a
wt.-av. mol. wt. of 8500 (dtd. by light scattering method) was sol.
in DMF. The π - π^* absorption peak of hydroquinone at 296 nm is
shifted to 345 nm in PPP-2,5-OH and this polymer underwent two-step
electrochem. oxidn. at about 0.5 and 0.8 V vs. Ag/Ag⁺.
Poly(p-hydroquinone) with acetylenic main chain was also prepd.; the
polymer has electrochem. oxidn. with oxidn. potential at about 1.0 V
vs. Ag/Ag⁺. Optical and x-ray diffraction data of the polymers and
their precursor polymers suggest stacking of the polymer mols.
- IT **254116-74-0P 254116-76-2P 254116-78-4P**
254116-80-8P
(prepn. and redox electrochem. and optical properties of

π -conjugated polymers contg. hydroquinone and p-benzoquinone
and p-diacetoxyphenylene units)

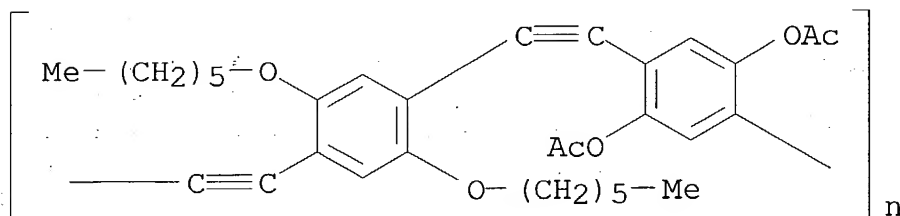
RN 254116-74-0 HCA

CN Poly[[2,5-bis(acetyloxy)-1,4-phenylene]-1,2-ethynediyl[2,5-bis(dodecyloxy)-1,4-phenylene]-1,2-ethynediyl] (9CI) (CA INDEX NAME)



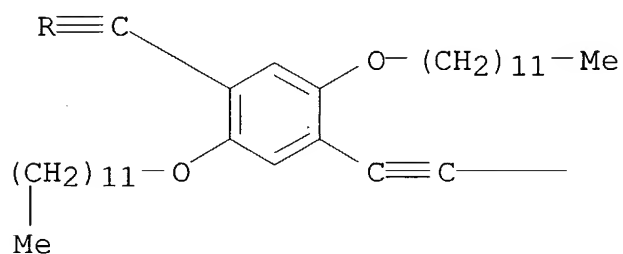
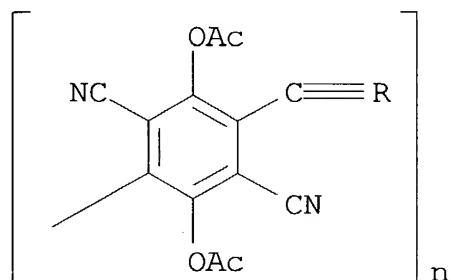
RN 254116-76-2 HCA

CN Poly[[2,5-bis(acetyloxy)-1,4-phenylene]-1,2-ethynediyl[2,5-bis(hexyloxy)-1,4-phenylene]-1,2-ethynediyl] (9CI) (CA INDEX NAME)



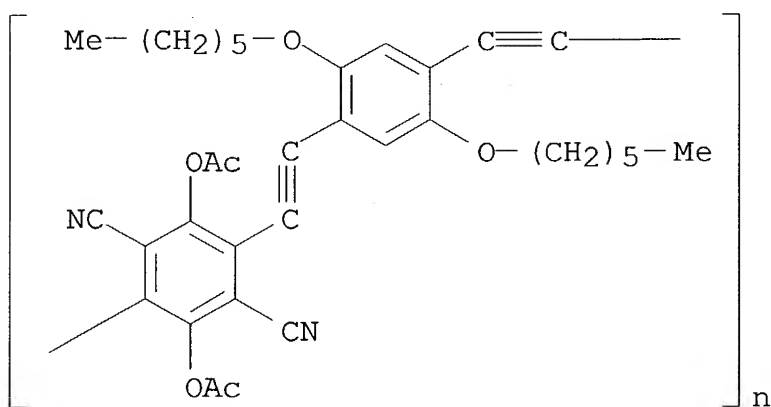
RN 254116-78-4 HCA

CN Poly[[2,5-bis(acetyloxy)-3,6-dicyano-1,4-phenylene]-1,2-ethynediyl[2,5-bis(dodecyloxy)-1,4-phenylene]-1,2-ethynediyl] (9CI) (CA INDEX NAME)



RN 254116-80-8 HCA

CN Poly[[2,5-bis(acetyloxy)-3,6-dicyano-1,4-phenylene]-1,2-ethynediyl[2,5-bis(hexyloxy)-1,4-phenylene]-1,2-ethynediyl] (9CI)
(CA INDEX NAME)



CC 35-5 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 36, 73

IT **Luminescence**

Oxidation, electrochemical

Polymer chains

(prepn. and redox electrochem. and optical properties of
π-conjugated polymers contg. hydroquinone and p-benzoquinone)

and p-diacetoxyphenylene units)
 IT 254116-73-9P **254116-74-0P** 254116-75-1P
254116-76-2P 254116-77-3P **254116-78-4P**
 254116-79-5P **254116-80-8P**
 (prepn. and redox electrochem. and optical properties of
 π -conjugated polymers contg. hydroquinone and p-benzoquinone
 and p-diacetoxyphenylene units)

L83 ANSWER 3 OF 4 HCA COPYRIGHT 2004 ACS on STN

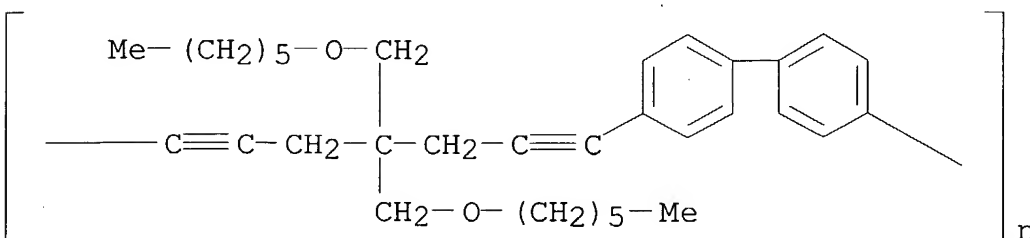
129:260929 Zirconocene-coupling routes to conjugated polymers: soluble poly(arylenedienylene)s. Lucht, Brett L.; Tilley, T. Don (Department of Chemistry, University of California, Berkeley, Berkeley, CA, 94720-1460, USA). Chemical Communications (Cambridge) (16), 1645-1646 (English) **1998**. CODEN: CHCOFS. ISSN: 1359-7345. Publisher: Royal Society of Chemistry.

AB Zirconocene-coupling of (alkynyl-CH₂-C(CH₂OC₆H₁₃)₂CH₂C C-aryl-)n polymers, followed by hydrolysis, provides a convenient, versatile route to sol., diene-aryl polymers. The procedure allows for incorporation of a variety of arom. units into the backbone of sol. poly(arylene dienylenes). Polycondensation of alkynyl-contg. di-O-hexyl compd. with 1,4-dibromoaryl compds. catalyzed by Pd(PPh₃)₄/CuI produced polymers that contain alkenyl moieties as verified by IR spectra. The polymers were converted to deeply colored arylene-zirconacyclopentadiene polymers via addns. to a soln. of zirconocene formed by addn. of Bu-Li to zirconocene dichloride at -78°. These metal-contg. polymers were then converted to the corresponding poly(arylenedienylene)s by addn. of aq. HCl. The optical properties of the poly(arylenedienylene)s vary considerably, according to the structure of the arom. rings; absorption maxima and **photoluminescence** quantum yields indicate effects due to incomplete conversion to the diene polymer.

IT **213313-79-2DP**, zirconocene coupling products; demetallized
 (prepn. and optical properties of sol. poly(arylenedienylene)
 conjugated polymers via zirconocene-coupling)

RN 213313-79-2 HCA

CN Poly[[1,1'-biphenyl]-4,4'-diyl[4,4-bis[(hexyloxy)methyl]-1,6-heptadiyne-1,7-diyl]] (9CI) (CA INDEX NAME)

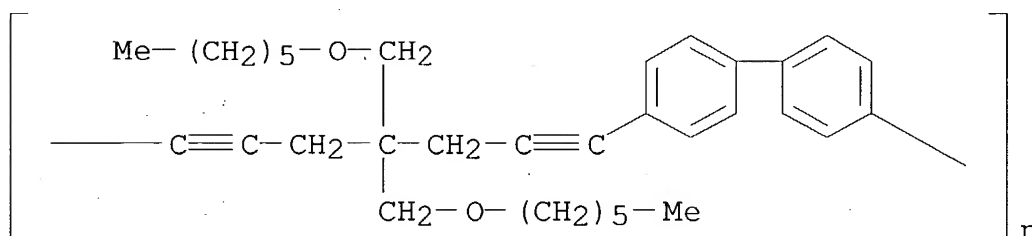


IT **213313-79-2P**

(prepn. and optical properties of sol. poly(arylenedienylene)
conjugated polymers via zirconocene-coupling)

RN 213313-79-2 HCA

CN Poly[[1,1'-biphenyl]-4,4'-diyl[4,4-bis[(hexyloxy)methyl]-1,6-heptadiyne-1,7-diyl]] (9CI) (CA INDEX NAME)



CC 35-4 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 36, 73

ST polyarylenedienylene prepn zirconocene coupling optical property;
conjugated polymer polyarylenedienylene prepn

photoluminescence

IT IR absorption

Luminescence

(prepn. and optical properties of sol. poly(arylenedienylene)
conjugated polymers via zirconocene-coupling)

IT 213313-76-9DP, zirconocene coupling products, demetallized

213313-77-0DP, zirconocene coupling products, demetallized

213313-78-1DP, zirconocene coupling products, demetallized

213313-79-2DP, zirconocene coupling products, demetallized

213313-80-5DP, zirconocene coupling products, demetallized

213313-81-6DP, zirconocene coupling products, demetallized

213313-82-7DP, zirconocene coupling products, demetallized

213313-83-8DP, zirconocene coupling products, demetallized

213313-84-9DP, zirconocene coupling products, demetallized

213313-85-0DP, zirconocene coupling products, demetallized

213313-86-1DP, zirconocene coupling products, demetallized

213313-87-2DP, zirconocene coupling products, demetallized

213313-88-3DP, zirconocene coupling products, demetallized

(prepn. and optical properties of sol. poly(arylenedienylene)
conjugated polymers via zirconocene-coupling)

IT 1291-32-3DP, Zirconocene dichloride, coupling products with
poly(p-phenylenediynes) 213313-76-9P 213313-77-0P 213313-78-1P

213313-79-2P 213313-80-5P 213313-81-6P 213313-82-7P

213313-83-8P 213313-84-9P 213313-85-0P 213313-86-1P

213313-87-2P 213313-88-3P 213476-99-4P

(prepn. and optical properties of sol. poly(arylenedienylene)
conjugated polymers via zirconocene-coupling)

70:38243 Photogeneration of charge carriers in acetylenic polymers and its sensitization by dyes. Myl'nikov, V. S.; Terenin, A. N. (Leningrad Univ., Leningrad, USSR). Journal of Polymer Science, Polymer Symposia, Volume Date 1965, No. 16(Pt. 7), 3655-65 (English) 1968. CODEN: JPYCAQ. ISSN: 0360-8905.

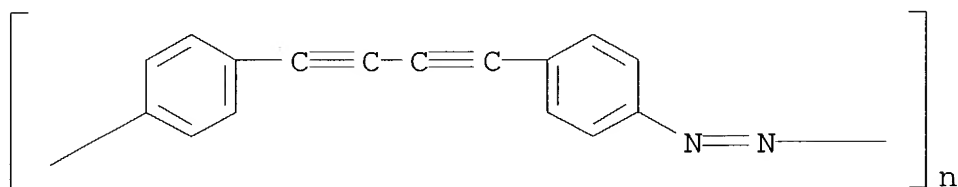
AB A significant inner photoeffect in org. polymers with triple bonds R C.tplbond.CR'C.tplbond.C nR, and the metal polyacetylenides RC.tplbond.CM was found and investigated by means of d.c. photocond. and photoemf. in intermittent light. The dependence of the photocurrent (i) on the light intensity can be expressed by the equation $i_{ph} = \alpha L^n$, where $0.5 < n < 1$. The photocurrent relaxation in the range of 10⁻⁵ sec. to several min. displays a second-order process. Ohm's law is not obeyed. The absorption spectra were compared with those of photocond., photoemf., and luminescence. Preliminary far-uv irradiation increases the photosensitivity; this is ascribed to bond rupture and electron-trapping. The latter is confirmed by E.S.R. measurements. Upon evacuation, the dark cond. and the photocond. are increased by 3 and 2 orders of magnitude, resp., and the photoemf. by 5. O and water vapor reversibly depress the dark and photocond. A photodesorption of O from the surface of metal polyacetylenide can be surmised. Electron acceptors (quinone, chloranil) and Hg vapor have a significant influence on the semiconduction. The photoeffect in the polymers can be spectrally sensitized by various adsorbed dyes. The proper sensitivity is equally changed on dye adsorption. The mechanism of the effects observed is discussed.

IT 28726-07-0

(photocond. of dye-sensitized)

RN 28726-07-0 HCA

CN Poly(azo-p-phenylenebutadiynylene-p-phenylene) (8CI) (CA INDEX NAME)



CC 35 (Synthetic High Polymers)

IT 28085-20-3 28726-07-0 28726-08-1
(photocond. of dye-sensitized)

=> d 166 1-84 ti

L66 ANSWER 1 OF 84 HCA COPYRIGHT 2004 ACS on STN

- TI Coating composition containing ethynyl-bearing aromatic compound and insulated film made from the same
- L66 ANSWER 2 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Third order nonlinear optical susceptibility of Langmuir-Blodgett membranes of some aromatic polydiacetylenes determined by Z-scan technique
- L66 ANSWER 3 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Carbonized aromatic polymers and their manufacture in high yield
- L66 ANSWER 4 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Low-K and heat-resistant film-forming compositions, method of coating and the coated films
- L66 ANSWER 5 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Organic solvent-soluble diyne (co)polymers, their manufacture, and heat- and solvent-resistant cured insulating films
- L66 ANSWER 6 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Synthesis and properties of polycarbogermanes containing 1,4-bis(thiophene or phenylene)buta-1,3-diyne
- L66 ANSWER 7 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI The preparation and some properties of substituted phenylene-ethynylene and phenylenebuta-1,3-diynylene polymers
- L66 ANSWER 8 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Spectroscopic study of soluble poly(2,5-dialkoxy-1,4-phenylene-alt-oligoethynylene)s
- L66 ANSWER 9 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Synthesis and Characterization of Mesogenic Disklike Benzenetricarboxylates Containing Diacetylenic Groups and Their Polymerization
- L66 ANSWER 10 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Photoconductivity of 3,5-dinitrobenzoates of poly[1-(p-methoxyphenyl)penta-1,3-diyne-5-ol] and poly[1-(p-N,N-dimethylaminophenyl)penta-1,3-diyne-5-ol]
- L66 ANSWER 11 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Excited-state dynamics of conjugated polycarbosilane oligomers with branched dimethyl or diphenyl group
- L66 ANSWER 12 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Synthesis and properties of conjugated polycarbosilanes with 1,4-bis(thiophene or phenylene)-buta-1,3-diyne

- L66 ANSWER 13 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Synthesis and characterization of a novel linear conjugated polymer, poly(2,5-didodecyloxy-1,4-phenyleneoctatetraynylene)
- L66 ANSWER 14 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Synthesis of a novel liquid crystalline polymer, poly(2,5-didecyloxy-1,4-phenylenebutadiynylyene)
- L66 ANSWER 15 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI NMR studies of polydiacetylenes having alkyl chains. Molecular motions of precursor monomers and the polymers at various stages of the solid-state polymerization
- L66 ANSWER 16 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Langmuir-blodgett membranes of 13-aryltrideca-10,12-diynoic acids
- L66 ANSWER 17 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Thermal polymerization of arylacetylenes. 2. Study of linear dimers
- L66 ANSWER 18 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Liquid Crystals Obtained from Disclike Mesogenic Diacetylenes and Their Polymerization
- L66 ANSWER 19 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Synthesis and thermal polymerization of phenylbutadiynylphenoxy group substituted 1,3,5-tricarbonylbenzene, cyclotriphosphazene and 1,3,5-triazine
- L66 ANSWER 20 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Study on macromolecules with three dimensional regularity 1. Synthesis and polymerization of benzene derivatives containing diacetylene groups
- L66 ANSWER 21 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Factors Affecting the Solid-State Polymerization of 1,4-Bis(1,3-octadecadiynyl)benzene to a Polydiacetylene
- L66 ANSWER 22 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Synthesis and molten-state polymerization of some novel conjugated diacetylenes
- L66 ANSWER 23 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Synthesis of the copolymers of p-diethynylbenzene with other acetylenic derivatives initiated by bis(triphenylphosphine)palladium dichloride
- L66 ANSWER 24 OF 84 HCA COPYRIGHT 2004 ACS on STN

- TI Synthesis and solid-state polymerization of ω -(4-aryl-1,3-butadiynyl) substituted 1-alkanol and alcanoic acid
- L66 ANSWER 25 OF 84 HCA COPYRIGHT 2004 ACS on STN
- TI Polymers of bis(dicarboxyphenyl)butadiyne derivatives having double and triple bonds in the chains
- L66 ANSWER 26 OF 84 HCA COPYRIGHT 2004 ACS on STN
- TI Diacetylene compounds and compositions for sliding parts
- L66 ANSWER 27 OF 84 HCA COPYRIGHT 2004 ACS on STN
- TI Polymers of ester group-substituted diacetylene derivatives
- L66 ANSWER 28 OF 84 HCA COPYRIGHT 2004 ACS on STN
- TI Diphenyldiacetylenetetracarboxylate esters for solid-phase polymerization
- L66 ANSWER 29 OF 84 HCA COPYRIGHT 2004 ACS on STN
- TI Synthesis of cross-linked platinum metal containing polyyne polymers
- L66 ANSWER 30 OF 84 HCA COPYRIGHT 2004 ACS on STN
- TI The study of copolymerization of p-diethynylbenzene with other acetylenic derivatives
- L66 ANSWER 31 OF 84 HCA COPYRIGHT 2004 ACS on STN
- TI Diacetylene sulfide esters and their polymers
- L66 ANSWER 32 OF 84 HCA COPYRIGHT 2004 ACS on STN
- TI Polyfunctional diacetylene compositions
- L66 ANSWER 33 OF 84 HCA COPYRIGHT 2004 ACS on STN
- TI Curing of oligophenylenes containing acetylene groups
- L66 ANSWER 34 OF 84 HCA COPYRIGHT 2004 ACS on STN
- TI Studies on diacetylenic vinyl compounds. IV. Copolymerization of phenyl-4'-vinylphenylbutadiyne with maleic anhydride
- L66 ANSWER 35 OF 84 HCA COPYRIGHT 2004 ACS on STN
- TI Double bond-containing polydiacetylenes
- L66 ANSWER 36 OF 84 HCA COPYRIGHT 2004 ACS on STN
- TI Polydiacetylenes with network structures
- L66 ANSWER 37 OF 84 HCA COPYRIGHT 2004 ACS on STN
- TI Diacetylenic group-containing polyesters with high elasticity and strength
- L66 ANSWER 38 OF 84 HCA COPYRIGHT 2004 ACS on STN

- TI Studies on diacetylenic vinyl compounds. III. The solid-state polymerization of phenyl-4'-vinylphenylbutadiyne
- L66 ANSWER 39 OF 84 HCA COPYRIGHT 2004 ACS on STN
- TI Manufacture of conjugate polymers containing tin and other metals in the main chain
- L66 ANSWER 40 OF 84 HCA COPYRIGHT 2004 ACS on STN
- TI Studies on diacetylenic vinyl compounds. I. Phenyl-4'-vinylphenylbutadiyne
- L66 ANSWER 41 OF 84 HCA COPYRIGHT 2004 ACS on STN
- TI Polymerization of m-diethynylbenzene and electrical properties of the polymer
- L66 ANSWER 42 OF 84 HCA COPYRIGHT 2004 ACS on STN
- TI Oligophenylenes
- L66 ANSWER 43 OF 84 HCA COPYRIGHT 2004 ACS on STN
- TI Electrically conducting polymers: arsenic pentafluoride-doped poly(phenylenevinylene) and its analogs
- L66 ANSWER 44 OF 84 HCA COPYRIGHT 2004 ACS on STN
- TI Structural composition of polymers relative to their plasma etch characteristics
- L66 ANSWER 45 OF 84 HCA COPYRIGHT 2004 ACS on STN
- TI Acetylene derivatives of hydroquinone
- L66 ANSWER 46 OF 84 HCA COPYRIGHT 2004 ACS on STN
- TI Unsaturated epoxides as coupling agents for carbon fibers and unsaturated matrix resins
- L66 ANSWER 47 OF 84 HCA COPYRIGHT 2004 ACS on STN
- TI Thermosetting compositions containing a poly(arylacetylene) and a poly(phenylene oxide)
- L66 ANSWER 48 OF 84 HCA COPYRIGHT 2004 ACS on STN
- TI Polyphenylene polymers
- L66 ANSWER 49 OF 84 HCA COPYRIGHT 2004 ACS on STN
- TI Couplers for carbon fiber composites
- L66 ANSWER 50 OF 84 HCA COPYRIGHT 2004 ACS on STN
- TI Thermosetting compositions containing poly(arylacetylenes)
- L66 ANSWER 51 OF 84 HCA COPYRIGHT 2004 ACS on STN
- TI Thermosetting compositions containing poly(arylacetylenes)

- L66 ANSWER 52 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Thermosetting compositions containing poly(arylacetylenes)
- L66 ANSWER 53 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Polyacetylene tetrapolymers
- L66 ANSWER 54 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Aromatized polyacetylenes
- L66 ANSWER 55 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Carboxylated poly(arylacetylenes)
- L66 ANSWER 56 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Thermosetting compositions
- L66 ANSWER 57 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Melt extrudable polyacetylene copolymer blends
- L66 ANSWER 58 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Process for producing shaped articles from an acetylenic polymer
- L66 ANSWER 59 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Thermosetting compositions of a poly(arylacetylene) and a phenolaldehyde resin
- L66 ANSWER 60 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Thermosetting compositions containing poly(arylacetylenes) and an aromatic ring compound having the rings joined through a keto group
- L66 ANSWER 61 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Continuous manufacture of spinnable polyacetylene solutions convertible to high strength graphite fibers
- L66 ANSWER 62 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Thermosetting compositions containing poly(arylacetylenes) and an aromatic ring compound having the rings joined through a nitrogen
- L66 ANSWER 63 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Polymer molding compositions
- L66 ANSWER 64 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Vitreous carbon articles
- L66 ANSWER 65 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Diethynylbenzene copolymer fibers
- L66 ANSWER 66 OF 84 HCA COPYRIGHT 2004 ACS on STN

- TI Heat-stabilized diethynylbenzene-diphenylbutadiyne copolymer
- L66 ANSWER 67 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Polyacetylene terpolymers and plasticized polyacetylene blends
- L66 ANSWER 68 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Heat-hardenable resin compositions
- L66 ANSWER 69 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Carbon fiber-carbon matrix composites
- L66 ANSWER 70 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Structure and properties of copolymers of p-diethynylbenzene with phenylacetylene
- L66 ANSWER 71 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Copolymers of acetylenes and phenols
- L66 ANSWER 72 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Acetylene polymers
- L66 ANSWER 73 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Carbon fibers from acetylenic polymers
- L66 ANSWER 74 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Polyacetylene terpolymers and plasticized polyacetylene mixtures
- L66 ANSWER 75 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Polyacetylenes by oxidative coupling. Synthesis and properties
- L66 ANSWER 76 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI New simple synthesis of soluble high-molecular-weight polyphenylenes by the cotrimerization of mono- and bifunctional terminal acetylenes
- L66 ANSWER 77 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Carbon fibers from acetylenic polymers
- L66 ANSWER 78 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Carbon fibers from acetylenic polymers
- L66 ANSWER 79 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI 2,4-Diethynylphenol and its derivatives
- L66 ANSWER 80 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Electrical conductivity of some polyethynylpolyarenes
- L66 ANSWER 81 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Thermal cross-polymerization, structure, and electrical conductivity

of poly[1,2-bis(4-ethynylphenyl)ethane]

L66 ANSWER 82 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Semiconductor organic polymers

L66 ANSWER 83 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Catalytic properties of polymers with ethynyl and cumulated double bond groupings in the chain

L66 ANSWER 84 OF 84 HCA COPYRIGHT 2004 ACS on STN
TI Polymeric acetylenes

=> d 166 35,36 cbib abs hitstr hitind

L66 ANSWER 35 OF 84 HCA COPYRIGHT 2004 ACS on STN
111:233943 Double bond-containing polydiacetylenes. Kato, Jinichiro; Nakamura, Katsuyuki (Agency of Industrial Sciences and Technology, Japan). Jpn. Kokai Tokkyo Koho JP 01108204 A2 **19890425** Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1987-263719 19871021.

AB Polymers are prepd. by polymg. R1XR2C.tplbond.CC.tplbond.CR3XR4 (I, R1, R4 = monovalent org. group; R1 and/or R4 contains a double bond; X = ester or amide linkage; R2, R3 = divalent org. group). Thus, H2C:CHCONHCH2C.tplbond.CH was coupled in pyridine in the presence of CuCl and O at room temp. to give I (R1 = R4 = H2C:CH, X = CONH, R2 = R3 = CH2), which was held at 40° for 1 wk in air to give a polymer. The IR spectrum indicated the polymn. of the diacetylene groups only.

IT **123449-76-3P**
(prepn. of)

RN 123449-76-3 HCA

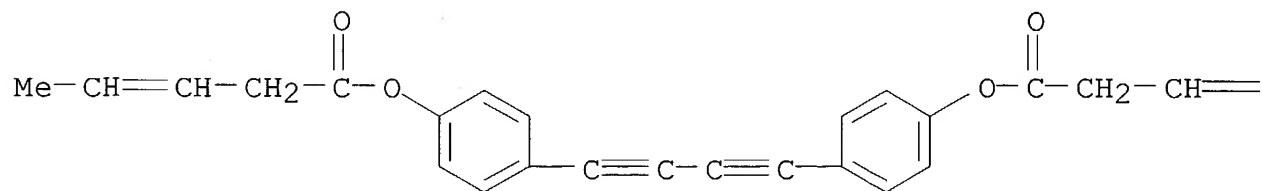
CN 3-Pentenoic acid, 1,3-butadiyne-1,4-diyl-di-4,1-phenylene ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 123449-75-2

CMF C26 H22 O4

PAGE 1-A



PAGE 1-B

=CH-Me

IC ICM C08F038-00
 CC 35-7 (Chemistry of Synthetic High Polymers)
 IT 116918-78-6P 120394-91-4P 121417-92-3P 123448-60-2P
123449-76-3P
 (prepn. of)

L66 ANSWER 36 OF 84 HCA COPYRIGHT 2004 ACS on STN
 111:195614 Polydiacetylenes with network structures. Kato, Jinichiro;
 Nakamura, Katsuyuki (Agency of Industrial Sciences and Technology,
 Japan). Jpn. Kokai Tokkyo Koho JP 01108210 A2 **19890425**
 Heisei, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP
 1987-263718 19871021.

AB Title polymers are prepd. by polymg. diacetylene groups of
 R1XR2C.tplbond.CC.tplbond.CR3XR4 (R1, R4 = org. group, one or both
 contg. double bond; R2, R3 = org. group; X = ester, amide) and then
 reacting the double bonds. Thus, oxidative coupling of
 CH2:CHCONHCH2C.tplbond.CH in pyridine in presence of CuCl gave
 CH2:CHCONHCH2C.tplbond.CC.tplbond.CCH2NHCOCH:CH2, which was heated
 20 h at 40° and 3 h at 170° to give title polymer.

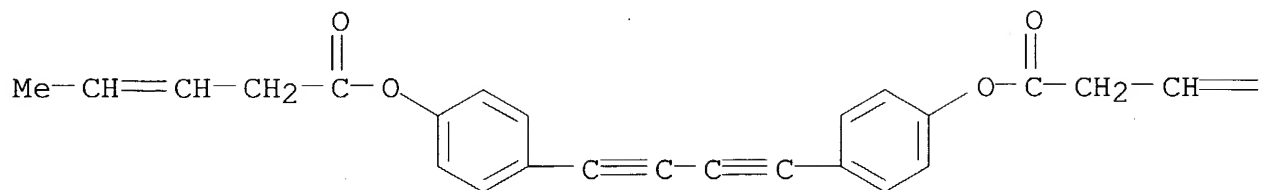
IT **123449-76-3P**
 (prepn. of, by solid-state polymn.)

RN 123449-76-3 HCA
 CN 3-Pentenoic acid, 1,3-butadiyne-1,4-diyl-di-4,1-phenylene ester,
 homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 123449-75-2
 CMF C26 H22 O4

PAGE 1-A



PAGE 1-B

=CH-Me

IC ICM C08F299-00
 ICS C08F038-00
 CC 35-4 (Chemistry of Synthetic High Polymers)
 IT 120394-91-4P 121417-92-3P 123448-60-2P **123449-76-3P**
 (prepn. of, by solid-state polymn.)

=> d his 184-

FILE 'REGISTRY' ENTERED AT 15:28:06 ON 03 JUN 2004
 L84 5870 S ?BUTADIYN?/CNS
 L85 308 S L12 AND L84
 L86 2 S L85 AND L7

FILE 'HCA' ENTERED AT 15:29:49 ON 03 JUN 2004
 L87 185 S L85
 L88 11 S L87 AND (L13 OR L14)
 L89 6 S L88 NOT (L64 OR L77 OR L65)
 L90 3 S L89 AND (1907-2000/PY OR 1907-2000/PRY)

=> d 190 1-3 cbib abs hitstr hitind

L90 ANSWER 1 OF 3 HCA COPYRIGHT 2004 ACS on STN
 122:162014 Optical absorption, **luminescence**, and UV-excited
 optically detected magnetic resonance (UV-ODMR) study of
 poly(p-phenyleneethynyleneaniline) (PPEA) derivatives. Smith, A.
 V.; Lane, P. A.; Shinar, J.; Sukwattanasinitt, M.; Barton, T. J.
 (USDOE Dep. Physics Astronomy, Iowa State Univ., Ames, IA, 50011,
 USA). Molecular Crystals and Liquid Crystals Science and
 Technology, Section A: Molecular Crystals and Liquid Crystals, 256,

685-90 (English) 1994. CODEN: MCLCE9. ISSN: 1058-725X.

Publisher: Gordon & Breach.

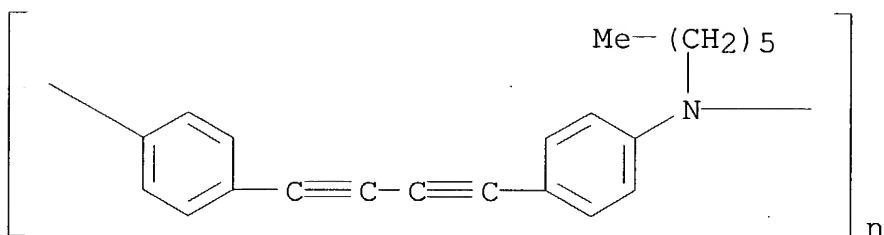
- AB The absorption, **photoluminescence** (PL), and X-band (9.35 GHz) ODMR spectra of several PPEA deriv. films is described and discussed. The absorption of the solns. and films peak at 390 - 415 and 415 - 422 nm, resp. The intense PL of the solns. and films peak at 425 - 450 and 450 - 490 nm, resp. Interestingly, the vibronic structure of the PL of the solns. is clearer than that of the films. The ODMR excited at $254 \leq \lambda_{\text{ex}} \leq 400$ nm includes the following familiar features: (i) a narrow polaron resonance at $g \approx 2.002$ and (ii) full- and half-field triplet exciton powder patterns. However, the widths of the polaron and full-field triplet powder pattern resonances are .apprx.30 and .apprx.1500 G, resp., as compared to 10 - 15 and 600 - 900 G, resp., of other π -conjugated polymers. The results are discussed in relation to structural disorder and defects in these polymers.

IT 161404-11-1

(optical absorption and **luminescence** and UV-excited optically detected magnetic resonance study of poly(p-phenyleneethynyleneaniline) derivs.)

RN 161404-11-1 HCA

CN Poly[(hexylimino)-1,4-phenylene-1,3-butadiyne-1,4-diyl-1,4-phenylene] (9CI) (CA INDEX NAME)



CC 36-5 (Physical Properties of Synthetic High Polymers)

Section cross-reference(s): 73

ST polyphenyleneethynyleneaniline optical absorption spectra; **luminescence** polyphenyleneethynyleneaniline; ODMR polyphenyleneethynyleneaniline

IT **Luminescence**

Optical absorption

(of poly(p-phenyleneethynyleneaniline) derivs.)

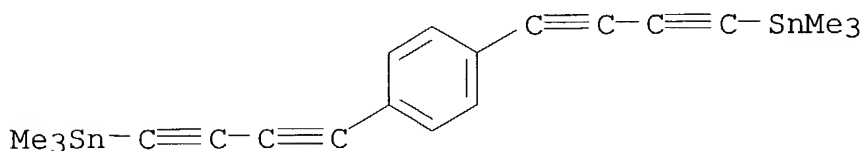
IT Polyacetylenes, properties

(optical absorption and **luminescence** and UV-excited optically detected magnetic resonance study of poly(p-phenyleneethynyleneaniline) derivs.)

IT Polyacetylenes, properties

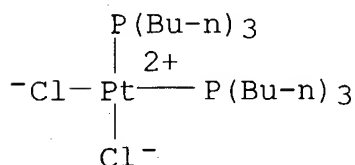
(polydiacetylenes, optical absorption and **luminescence** and UV-excited optically detected magnetic resonance study of

- poly(p-phenyleneethynyleneaniline) derivs.)
- IT 161404-11-1 161404-12-2 161404-13-3
(optical absorption and **luminescence** and UV-excited
optically detected magnetic resonance study of
poly(p-phenyleneethynyleneaniline) derivs.)
- L90 ANSWER 2 OF 3 HCA COPYRIGHT 2004 ACS on STN
116:215030 Di-, tri-, pseudodi- and pseudotetraacetylenic polymers of
platinum: synthesis, characterization and optical spectra. Lewis,
Jack; Khan, Muhammad S.; Kakkar, Ashok K.; Johnson, Brian F. G.;
Marder, Todd B.; Fyfe, Helen B.; Wittmann, Felix; Friend, Richard
H.; Dray, Ann E. (Univ. Chem. Lab., Cambridge, UK). Journal of
Organometallic Chemistry, 425(1-2), 165-76 (English) 1992.
CODEN: JORCAI. ISSN: 0022-328X.
- AB Reactions of $\text{Me}_3\text{Sn}-\text{C}\equiv\text{C}-\text{C}\equiv\text{C}-\text{SnMe}_3$ ($m = 1, 2$) and $\text{Me}_3\text{Sn}(\text{C}\equiv\text{C}-\text{C}\equiv\text{C})_m-\text{p}-\text{C}_6\text{H}_4(\text{C}\equiv\text{C}-\text{C}\equiv\text{C})_m\text{SnMe}_3$ ($m = 1, 2$) with
the platinum metal halide complexes $[\text{Pt}(\text{P}(\text{Bu})_3)_2\text{Cl}_2]$ and
 $[\text{Pt}(\text{As}(\text{Bu})_3)_2\text{Cl}_2]$ afford high mol. wt. polymeric species,
 $[-\text{Pt}(\text{X}(\text{Bu})_3)_2\text{C}\equiv\text{C}-\text{C}\equiv\text{C}-\text{C}\equiv\text{C}-\text{C}\equiv\text{C}-]_n$ ($\text{X} = \text{P}, \text{As}$) and
 $[-\text{Pt}(\text{P}(\text{Bu})_3)_2(\text{C}\equiv\text{C}-\text{C}\equiv\text{C})_m-\text{p}-\text{C}_6\text{H}_4(\text{C}\equiv\text{C}-\text{C}\equiv\text{C})_m]_n$ in excellent
yields. Investigations of the optical absorption and
photoluminescence spectra of these complexes show extended
 π -electron conjugation through the metal sites on the chain, with
a lower π - π^* energy gap for triacetylenic than for the
diacetylenic polymeric complexes. Well-resolved vibronic structure
assocd. with the $-\text{C}\equiv\text{C}-$ stretching frequency is obsd. for both
absorption and emission, indicating strong electron-phonon coupling
for the di- and triacetylenic polymers.
- IT 141317-07-9P
(prepn., optical absorption, and **photoluminescence**
spectra of)
- RN 141317-07-9 HCA
- CN Platinum, dichlorobis(tributylphosphine)-, polymer with
(1,4-phenylenedi-1,3-butadiyne-4,1-diyl)bis[trimethylstannane] (9CI)
(CA INDEX NAME)
- CM 1
- CRN 141135-33-3
- CMF C20 H22 Sn2



CM 2

CRN 15076-72-9
 CMF C24 H54 Cl2 P2 Pt
 CCI CCS



CC 35-6 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 29

ST platinum acetylenic polymer prepn optical spectra; optical
 absorption spectra platinum acetylenic polymer;
photoluminescence spectra platinum acetylenic polymer

IT **Luminescence**

(of platinum acetylenic polymers)

IT 137889-60-2P 137889-62-4P 141317-04-6P 141317-05-7P

141317-06-8P **141317-07-9P**(prepn., optical absorption, and **photoluminescence**
 spectra of)

L90 ANSWER 3 OF 3 HCA COPYRIGHT 2004 ACS on STN

70:38243 Photogeneration of charge carriers in acetylenic polymers and
 its sensitization by dyes. Myl'nikov, V. S.; Terenin, A. N.
 (Leningrad Univ., Leningrad, USSR). Journal of Polymer Science,
 Polymer Symposia, Volume Date 1965, No. 16(Pt. 7), 3655-65 (English)
1968. CODEN: JPYCAQ. ISSN: 0360-8905.

AB A significant inner photoeffect in org. polymers with triple bonds R
 C.tplbond.CR'C.tplbond.C nR, and the metal polyacetylenides
 RC.tplbond.CM was found and investigated by means of d.c. photocond.
 and photoemf. in intermittent light. The dependence of the
 photocurrent (i) on the light intensity can be expressed by the
 equation $iph = \alpha Ln$, where $0.5 < n < 1$. The photocurrent
 relaxation in the range of 10⁻⁵ sec. to several min. displays a
 second-order process. Ohm's law is not obeyed. The absorption
 spectra were compared with those of photocond., photoemf., and
luminescence. Preliminary far-uv irradiation increases the
 photosensitivity; this is ascribed to bond rupture and
 electron-trapping. The latter is confirmed by E.S.R. measurements.
 Upon evacuation, the dark cond. and the photocond. are increased by
 3 and 2 orders of magnitude, resp., and the photoemf. by 5. 0 and
 water vapor reversibly depress the dark and photocond. A
 photodesorption of O from the surface of metal polyacetylenide can

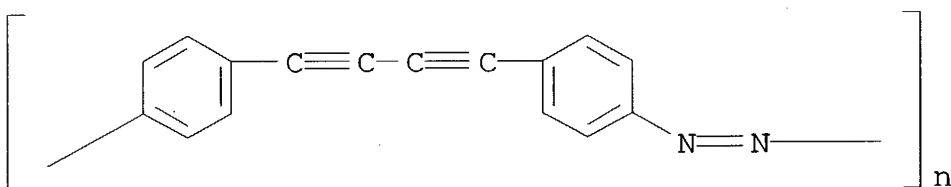
be surmised. Electron acceptors (quinone, chloranil) and Hg vapor have a significant influence on the semiconduction. The photoeffect in the polymers can be spectrally sensitized by various adsorbed dyes. The proper sensitivity is equally changed on dye adsorption. The mechanism of the effects observed is discussed.

IT 28726-07-0

(photocond. of dye-sensitized)

RN 28726-07-0 HCA

CN Poly(azo-p-phenylenebutadiynylene-p-phenylene) (8CI) (CA INDEX NAME)



CC 35 (Synthetic High Polymers)

IT 28085-20-3 28726-07-0 28726-08-1
(photocond. of dye-sensitized)